

Interactive System Productivity Facility (ISPF)



User's Guide Volume II

z/OS Version 1 Release 2.0

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Note

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Contents

Figures	vii
--------------------------	------------

Tables	xi
-------------------------	-----------

Preface	xiii
About This Book	xiii
Who Should Use This Book.	xiii
What Is in This Book	xiii

Summary of Changes	xv
ISPF Product Changes	xv
ISPF DM Component Changes	xv
ISPF PDF Component Changes	xvii
ISPF SCLM Component Changes	xviii
ISPF Client/Server Component Changes	xviii
ISPF User Interface Considerations	xviii
ISPF Migration Considerations.	xix
ISPF Profiles	xix
Year 2000 Support for ISPF	xix

What's in the z/OS V1R2.0 ISPF library?	xxi
z/OS V1R2.0 ISPF	xxi

Elements and Features in z/OS	xxiii
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Part 1. ISPF Options 1

Chapter 1. Settings (Option 0) 5

ISPF Settings Panel Fields	6
Select Options	6
Terminal Characteristics	9
Print Graphics Parm	10
General.	12
ISPF Settings Panel Action Bar	13
Specifying Log and List Defaults and Characteristics (The Log/List Action Bar Choice) .	15
Working with Function Keys and Keylists (The Function Keys Action Bar Choice)	21
The Function Keys Pull-Down	34
Changing Default Colors (The Colors Action Bar Choice)	35
Specifying ISPF ENVIRON Settings (The Environ Action Bar Choice)	42
Specifying Workstation Parameters (The Workstation Action Bar Choice).	43
Displaying Screen Name, Message Identifiers, and Panel Identifiers (The Identifier Action Bar Choice).	52

Chapter 2. View (Option 1) 59

View Entry Panel Action Bar	60
View Entry Panel Fields	61

Browsing a Data Set	62
Ending Browse	62
Browse Primary Commands	63

Chapter 3. Edit (Option 2). 75

Editing a Data Set	76
Edit Entry Panel Action Bar	77
Edit Entry Panel Fields	77

Chapter 4. Utilities (Option 3) 81

Utility Selection Panel Action Bar	81
Library Utility (Option 3.1)	82
Library Utility Panel Action Bar	82
Library Utility Panel Fields	83
Library Utility Options for Data Sets	83
Library Utility Options for Members	92
Data Set Utility (Option 3.2)	93
Data Set Utility Panel Action Bar	94
Data Set Utility Panel Fields.	95
Data Set Utility Options	95
Move/Copy Utility (Option 3.3)	115
Move/Copy Utility Panel Action Bar	116
Move/Copy Utility Panel Fields	116
Move/Copy Utility Options	117
Data Set List Utility (Option 3.4)	123
Data Set List Utility Panel Action Bar	123
Data Set List Utility Panel Fields	124
Data Set List Utility Options	128
Data Set List Utility Line Commands	141
Data Set List Utility Primary Commands	147
Reset ISPF Statistics Utility (Option 3.5)	155
Reset ISPF Statistics Panel Action Bar	156
Reset ISPF Statistics Panel Fields	156
Reset ISPF Statistics Utility Options	157
Hardcopy Utility (Option 3.6)	159
Hardcopy Utility Panel Action Bar	159
Hardcopy Utility Panel Fields	160
Generating and Submitting JCL	160
Additional Batch Printing Information	162
Using the TSO/E Information Center Facility	162
Download Data Set to Workstation Utility (Option 3.7).	164
Selection 1 — ISPF C/S	164
Selection 2—Data Set	178
Outlist Utility (Option 3.8)	179
Outlist Utility Panel Action Bar	180
Outlist Utility Panel Fields	180
Outlist Utility Options	181
Command Table Utility (Option 3.9).	182
Command Table Utility Panel Fields.	183
Scrolling a Command Table	185
Saving a Command Table	185
Cancelling a Command Table	185
Using Command Table Line Commands	185
Format Specifications Utility (Option 3.11).	186

Format Specifications Panel Action Bar	187
Format Specifications Panel Fields	187
Format Specifications Panel Options.	188
Format Selection List Commands.	191
SuperC Utility (Option 3.12)	192
SuperC Utility Panel Action Bar	193
SuperC Utility Panel Fields.	194
SuperC Member Lists	197
Submitting a SuperC Job in Batch Mode	199
Using the NOLIST Listing Type in Batch Mode	201
SuperCE Utility (Option 3.13)	202
SuperCE Utility Panel Action Bar.	203
SuperCE Utility Panel Fields	203
SuperCE Utility Options.	207
Search-For Utility (Option 3.14)	215
Search-For Utility Panel Action Bar	216
Search-For Utility Panel Fields.	216
Specifying Additional Search Strings	218
Search-For Strings and Keywords.	219
Search-For Member Lists	220
Submitting a Search-For Job in Batch Mode	220
Search-ForE Utility (Option 3.15)	221
Search-ForE Utility Panel Action Bar	222
Search-ForE Utility Panel Fields	222

Chapter 5. Foreground (Option 4). 229

Foreground Selection Panel Action Bar	229
Foreground Processing Sequence	230
Expanding Packed Data	233
Member Expansion (ISRLEMX)	234
Restrictions on Member Expansion and Member Parts Lists	235
Member Expansion ISRLEMX Return Codes	237
Trigger Statement Errors.	237
Input Data Sets.	237
List Data Sets	238
Password Protection	239
Object Data Sets	239
Foreground—TSO/E Information Center Facility	240
Assembler (Option 4.1)	240
COBOL (Option 4.2)	241
VS FORTRAN Compile (Option 4.3).	242
PL/I (Option 4.5)	243
VS Pascal Compile (Option 4.6)	244
Binder/Linkage Editor (Option 4.7)	245
Linkage Editor Concatenation Sequence	247
SCRIPT/VS Processor (Option 4.9)	247
SCRIPT/VS Processing Sequence.	248
Selecting a Formatting Style	251
Changing Style Options	252
Using SCRIPT/VS with the TSO/E Information Center Facility	253
VS COBOL II Interactive Debug (Option 4.10)	254
OS/VS COBOL Debug (Option 4.10A)	255
COBOL Debug Processing Sequence.	256
Symbolic Debug Data Sets	257
Print Output Data Sets	257
FORTRAN Debug (Option 4.11)	258
Member Parts List (Option 4.12)	259
Member Not Found	263
C/370 Compile (Option 4.13)	263

REXX/370 Compile (Option 4.14).	263
Ada/370 Compile (Option 4.15)	264
AD/Cycle C/370 Compile (Option 4.16)	265
ISPDTLC (Option 4.18)	265
OS/390 C/C++ Compile (Option 4.19)	268
z/OS C/C++ Compile (Option 4.20).	269

Chapter 6. Batch (Option 5) 271

Batch Selection Panel Action Bar	271
Batch Processing Sequence	272
JCL Generation—Compilers	274
JCL Generation—Assemblers and Linkage Editor	276
Assembler (Option 5.1)	276
COBOL Compile (Option 5.2)	277
VS FORTRAN Compile (Option 5.3).	278
PL/I Compile (Option 5.5)	279
VS Pascal Compile (Option 5.6)	279
Binder/Linkage Editor (Option 5.7)	280
VS COBOL II Interactive Debug (Option 5.10)	282
Member Parts List (Option 5.12)	283
C/370 Compile (Option 5.13)	283
REXX/370 Compile (Option 5.14).	284
Ada/370 Compile (Option 5.15)	285
AD/Cycle C/370 Compile (Option 5.16)	285
ISPDTLC Compile (Option 5.18)	286
C/C++ for MVS/ESA Compile (Option 5.19)	288
z/OS C/C++ Compile (Option 5.20).	289

Chapter 7. Command (Option 6) 291

ISPF Command Shell Panel Action Bar	291
The ISPF Command Shell Panel Saved Command Area	293
Entering TSO Commands, CLISTs, and REXX EXECs.	293
Rules for Entering TSO Commands	294
Rules for Entering CLISTs and REXX EXECs	294
Using the Session Manager.	294

Chapter 8. Dialog Test (Option 7) 297

The Dialog Test Environment	297
Dialog Test Primary Option Panel Action Bar	299
Using Variables.	300
Severe Error Handling	300
Commands	301
Ending the Current Option without Saving Changes	303
Saving Changes	303
Finding a Character String	303
Displaying Breakpoint Qualification Data	303
Restoring the Format of the Breakpoints Panel	303
Dialog Test Line Commands	303
Setting a Keylist for Dialog Test	304
Functions (Option 7.1)	305
Invoke Dialog Function/Selection Panel Action Bar	306
Invoke Dialog Panel Fields	306
Panels (Option 7.2)	308
Display Panel Action Bar	309
Display Panel Fields	309
Variables (Option 7.3).	311

Variables Panel Action Bar	312
Variables Panel Fields	313
Manipulating Variables	313
Variables Usage Notes	314
Tables (Option 7.4)	315
Tables Panel Action Bar	316
Tables Panel Fields	317
Tables Panel Options	318
Log (Option 7.5)	328
ISPF Transaction Log Not Available	329
Trace Output in ISPF Log	329
Dialog Services (Option 7.6)	330
Invoke Dialog Service Panel Action Bar.	331
Special Display Panel.	332
Traces (Option 7.7)	333
1—Function Traces	334
2—Variable Traces	336
Breakpoints (Option 7.8).	337
Specifying Breakpoints	338
Breakpoints Panel Action Bar	338
Breakpoints Panel Fields.	339
Qualification Parameter Values	339
Finding a Breakpoint	341
Tutorial (Option 7.T)	343
Exit (Option 7.X)	344

Chapter 9. IBM Products (Option 9) 345

Tivoli Service Desk for OS/390(Option 9.3)	345
COBOL/SF-F (Option 9.4)	346
SDF II (Option 9.6)	347
SDF II-P (Option 9.7).	347

Chapter 10. SCLM (Option 10) 349

SCLM Main Menu Action Bar	349
SCLM Overview	350

Chapter 11. ISPF Object/Action

Workplace (Option 11) 353

Selecting Objects	353
Workplace Entry Panel	353
Specifying Actions.	356
Choices on the Workplace Action Bar	356
Actions That Require Prompt Windows for More Information	368
Commands	375
Default CUA Function Key Settings	377
Changing Workplace Settings	377
Workplace Example Scenario	381

Part 2. Appendixes 385

Appendix A. SuperC Reference. 387

Utility Differences	387
Standard Utilities	387
Extended Utilities	388
Program Description	388
SuperC Features for the Year 2000 Transition	389
Applications.	390
SuperC Compare Process Options	391

SuperC Compare Process Statements	403
Process Statement Notation Conventions	403
CHNGV - CHNG (Compare Type) Line Value	407
CMPBOFS - Compare Byte Offsets	408
CMPCOLM, CMPCOLMN, CMPCOLMO - Compare Columns	409
CMPLINE - Compare Lines	410
CMPSECT - Compare Sections	412
COLHEAD—Define Column Headings.	414
DPLINE, DPLINEC - Don't Process Lines	416
LNCT - Line Count	418
LSTCOLM - List Columns	419
NCHGT, OCHGT - Change Text	420
NEXCLUDE, OEXCLUDE —Exclude Data:	422
NFOCUS, OFOCUS— Focus on Data	423
NTITLE, OTITLE - Alternate Listing Title	424
NY2AGE, OY2AGE —Year 2000 Aging Option	425
NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D, OY2P —Year 2000 Date Definitions	426
REVREF—Revision Code Reference	429
SELECT - Select PDS Members	430
Y2PAST—Year 2000 Global Date Option	431
SLIST - Statements File Listing Control	432
* and * - Comment Lines (SuperC Listing)	433
SuperC Search-For Process Options	433
SuperC Search-For Process Statements	437
Process Statement Notation Conventions	437
CMPCOLM - Compare (Search) Columns	438
CMPLINE - Compare (Search-For) Lines	439
DPLINE, DPLINEC - Don't Process Lines	440
LNCT - Line Count	442
LPSFV - LPSF Count Value.	443
LSTCOLM - List Columns	444
NCHGT - Change Text of New (Search) Text String	445
NTITLE - Alternate Listing Title	447
SELECT - Select PDS Members	448
SLIST - Statements File Listing Control	449
SRCHFOR, SRCHFORC - Search for Strings in the Input Files	450
* and * - Comment Lines (Search-For Listing)	452
Return Codes	452
SuperC and Search-For Technical Overview	453
How SuperC and Search-For Filter Input File Lines	453
How SuperC Matches Input Files.	454
How SuperC Partitions and Processes Large Files	456
Why Compare Types May Produce Different Comparison Results	456
Comparing and Searching Alias Members	457
Comparing Load Modules	457
Comparing CSECTs	458
How to Directly Invoke SuperC and Search-For	458

Appendix B. SuperC Listings 461

SuperC Listing Title Lines	465
Listing Output Section	465
Listing Prefix Codes	466
Type-of-Difference Codes	466
Member Summary Listing	468

Summary and Statistics/PDS Overall Totals	468
Bottom-of-Listing Information	469
Y2K Comparison	470
Side-By-Side Listings	470
Effect of File Compare Type on SuperC Listings	471
File Comparison of a Sequential Data Set or Membered PDS.	472
File Comparison of a Complete PDS.	472
Search-For Listings	473
Update Data Set Control Output Examples	474
APNDUPD—Append Update Data Set.	474
UPDCMS8—Update CMS Sequenced 8.	475
UPDCNTL—Update Control	475
UPDMVS8—Update MVS Sequenced 8.	479

UPDLDEL—Update Long Source and Delta Data Set	479
UPDPDEL—Prefixed Delta Lines.	480
UPDREV—Update Revision	481
UPDREV2 - Update Revision (2)	483
UPDSEQ0—Update Sequenced 0.	483
UPDSUMO—Update Summary Only	484

Notices 489

Programming Interface Information	490
Trademarks	490

Index 493

Figures

1. ISPF Settings Panel (ISPISMMN)	6	36. Identifier Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)	53
2. Screen Containing Graphics to Be Printed Using PRINTG	11	37. Message Identifier Panel (ISPISMMI)	54
3. Example of Using Aspect Ratio Parameter 0	12	38. Panel Displayed with the Message Identifier Set to On	55
4. Example of Using Aspect Ratio Parameter 1	12	39. Panel Identifier Panel (ISPISMPI)	56
5. Log/List Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)	15	40. Panel Displayed with the Panel Identifier Set to On	57
6. Log Data Set Defaults Panel (ISPISML1)	16	41. View Entry Panel (ISRBRO01)	60
7. List Data Set Defaults Panel (ISPISML2)	17	42. Browse - Data Display (ISRBROBA)	62
8. List Data Set Characteristics Panel (ISPISML3)	19	43. Browse - Column-Identification Line (ISRBROBA)	64
9. Log and List JCL Panel (ISPISMLJ)	20	44. Browse Hexadecimal Display - Vertical (ISRBROBA)	71
10. Function Keys Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)	22	45. Browse Hexadecimal Display - Data (ISRBROBA)	71
11. PF Key Definitions and Labels Panel (ISPOPT3D)	23	46. Edit Entry Panel (ISREDM01)	76
12. Using the PF Key Definitions and Labels Panel (ISPOPT3E)	25	47. Utility Selection Panel	81
13. Example Screen with Function Key Definition Lines.	25	48. Library Utility Panel (ISRUDA1)	82
14. Keylist Utility Panel (ISPKLUP)	26	49. Member List Commands Pop-Up Window (ISRCMLEP)	84
15. Keylist Utility with File Action Bar Pull-Down (ISPKLUP)	27	50. Data Set Information (ISRUAIIP)	86
16. Keylist Create Panel (ISPKLUCR)	28	51. Volume Information for a Multivolume Data Set (ISRUAMVI)	87
17. Keylist Change Panel (ISPKLUCH)	29	52. Data Set Information for Managed Data Sets (ISRUAISE)	88
18. Keylist Utility View Panel (ISPKLUB)	31	53. Volume Information for a Managed Multivolume Data Set (ISRUAMVI)	88
19. Keylist Utility with Delete Keylist Confirmation Pop-Up (ISPKLUP)	32	54. Data Set Information for PDSE Managed Data Sets (ISRUAISE)	89
20. Keylist Utility with View Action Bar Pull-Down (ISPKLUP)	32	55. Short Data Set Information (ISRUAIIP)	90
21. Tailor Function Key Definition Display Panel (ISPOPFA)	33	56. Data Set Information (Short) for Managed Data Sets (ISRUAISE)	91
22. Colors Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)	36	57. Data Set Information (Short) for a PDSE (ISRUAISE)	92
23. Global Color Change Utility Panel (ISPOPT10)	37	58. Data Set Utility Panel (ISRUDA2S)	94
24. Global GUI Color Change Utility Panel (ISPOPTG1)	38	59. Allocate New Data Set Panel (ISRUAAIP2)	96
25. Color Change Panel With Drop-Down List	39	60. Allocate New Data Set —Managed Data Set Support Panel (ISRUAASE)	96
26. CUA Attribute Change Utility Panel (ISPOPT11)	40	61. Multivolume Allocation Panel (ISRUAMV)	100
27. CUA Attribute Change Utility Panel Positioned on the Point-and-Shoot Panel Element (ISPOPT1X)	42	62. Allocation Error Panel (ISRUADCS)	101
28. ISPF ENVIRON Settings Panel (ISPENVA)	43	63. Rename Data Set Panel (ISRUARP1)	103
29. GUI Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)	44	64. Rename Data Set Panel (ISRUARC1)	105
30. Client/Server Component Update Panel (ISPDTVD1)	45	65. Uncatalog Data Set Panel (ISRUACC1)	105
31. Client/Server Component Install Program Panel (ISPWSD0A)	46	66. Confirm Delete Panel (ISRUADC1)	106
32. Initiate Workstation Connection Panel (ISPISMG1) part 1	47	67. Confirm Purge Panel (ISRUADC3)	107
33. Initiate Workstation Connection Panel (ISPISMG1) part 2	47	68. VSAM Utilities Panel (ISRUVSAM)	109
34. WSA Connection Panel.	48	69. Define Cluster Panel (ISRUVP3)	111
35. GUI Settings Pop-Up (ISPISMG5)	51	70. Editing the IDCAMS Command (ISRUVEDT)	112
		71. Browsing IDCAMS Errors (ISRUVBRO)	112
		72. Functions Pull-Down on a VSAM Input Panel (ISRUVP3)	113
		73. Profile Member Name Panel (ISRUVSAM)	114
		74. Using a VSAM Profile Data Set (ISRVMLGT)	114
		75. Panel for Changing the Name of the VSAM Profile Data Set (ISRUVGET)	115

76. Move/Copy Utility Panel (ISRUMC1)	116	117. SuperC Utility - Old Data Set Panel (ISRSSOLD)	195
77. Move/Copy Utility - "To" Panel for Copying (ISRUMC2B)	118	118. SuperC Member List Panel (ISRSSML)	198
78. Move/Copy Utility - "To" Panel for Moving (ISRUMC2B)	120	119. SuperC Utility - Submit Batch Jobs Panel (ISRSCSUB)	199
79. Data Set List Utility Panel (ISRUDDL)	123	120. SuperC Utility - Submit Batch Jobs Panel using NOLIST (ISRSCSB1)	202
80. Sequence of Data Set List Display Views	127	121. SuperCE Utility Panel (ISRSEPRI)	203
81. Confirm Member Delete Panel (ISRUDELCD)	128	122. SuperCE - Concatenation Interactive Entry Panel (ISRSECAT)	208
82. Data Set List - Volume View (ISRUDSL0)	130	123. SuperCE - Concatenation Batch Entry Panel (ISRSECAT)	209
83. Data Set List - Space View (ISRUDSL0)	131	124. SuperC Process Statements Panel (ISRSEPRS)	211
84. Data Set List - Attributes View (ISRUDSL0)	132	125. Browse A SuperCE Profile	212
85. Data Set List - Total View (ISRUDSL0)	132	126. SuperCE - Profile Manager Panel (ISRSEPMG)	213
86. VTOC Summary Information Panel (ISRUDSL0)	140	127. SuperC - Defaults Panel (ISRSDFLT)	215
87. Data Set List Commands Pop-Up (ISRUABC)	142	128. Search-For Utility Panel (ISRSEFSPR)	216
88. Member List Display - Expanded Line Command Field (ISRUADM)	144	129. Additional Search Strings Panel (ISRSEFST)	218
89. Load Module Library Display - Expanded Line Command Field (ISRUADM)	144	130. Search Member List Panel (ISRSSML)	220
90. Data Set List Color Change Utility Panel (ISRDLC)	150	131. Search-For Utility - Submit Batch Jobs Panel (ISRSEFSSUB)	221
91. Data Set List Utility - SHOWCMD Panel (ISRUADSL)	153	132. Extended Search-For Utility Panel (ISRSEFPRI)	222
92. Reset ISPF Statistics Panel (ISRUASP)	156	133. Extended Search-For - Concatenation Data Set Entry Panel (ISRSEFCON)	225
93. Hardcopy Utility Panel - before JCL Generation (ISRUHCP)	159	134. Extended Search-For - Concatenation Batch Entry Panel (ISRSEFCON)	226
94. Hardcopy Utility Panel - after JCL Generation (ISRUHCP)	161	135. Search-For Process Statements Panel (ISRSEFPRS)	228
95. Hardcopy Utility Panel - with the TSO/E Information Center Facility Installed (ISRUHCPI)	163	136. Foreground Selection Panel (ISRFP)	229
96. Download Data Set to Workstation Utility Panel (ISPUDL)	164	137. Foreground Print Options Panel (ISRFPRT)	233
97. ISPF Client/Server Component Download Panel (ISPUWSD01)	165	138. Foreground Print Options Panel With TSO/E Information Center Facility (ISRFPRI)	240
98. ISPF Client/Server Installation Notice (ISPUWSD02)	166	139. Foreground Assembler Panel (ISRFP01)	241
99. Second Client/Server Component Download Panel (ISPUWSD04)	167	140. Foreground COBOL Compile Panel (ISRFP02)	242
100. ISPF Client/Server Component Install Program Panel (ISPUWSD07)	168	141. Foreground VS FORTRAN Compile Panel (ISRFP03)	243
101. ISPF Client/Server Installation Notice (ISPUWSD03)	168	142. Foreground PL/I Optimizing Compile Panel (ISRFP05)	244
102. ISPF Client/Server Component Install Program Panel (ISPUWSD06)	169	143. Foreground VS Pascal Compile Panel (ISRFP06)	245
103. Client/Server Component Download Panel (ISPUWSD05)	170	144. Foreground Binder/Linkage Editor Panel (ISRFP07B)	246
104. The Workstation Agent window	174	145. SCRIPT/VS Processor Panel (ISRFP09)	248
105. System Register Panel	176	146. Foreground Print Options for Style Panel (ISRFP09P)	250
106. Add System Pop-up Dialog	177	147. Select SCRIPT/VS Formatting Style Panel (ISRFP09T)	252
107. Add User Pop-up Dialog	178	148. SCRIPT/VS Options for Style: DRAFT Panel (ISRFP09O)	253
108. ISPF Data Set Panel (ISPUWSD05)	179	149. Foreground Print Options for Style Panel with the TSO/E Information Center Facility (ISRFP09I)	254
109. Outlist Utility Panel (ISRUOLP1)	180	150. Foreground VS COBOL II Interactive Debug Panel (ISRFP10)	255
110. Command Table Utility Panel (ISPUWMA)	183	151. COBOL Debug Panel (ISRFP10A)	256
111. Command Table Editing Panel (ISPUWMD)	184	152. FORTRAN Debug Panel (ISRFP11)	258
112. Format Specifications Panel (ISRFM01)	187	153. Foreground Member Parts List Panel (ISRFP12)	260
113. Format Definition Panel (ISRFM02)	188	154. Member Parts List Display (ISRFP12B)	261
114. Copy Format Selection List Panel (ISRFM04)	190	155. Foreground C/370 Compile Panel (ISRFP13)	263
115. Format Selection List Panel (ISRFM03)	191		
116. SuperC Utility Panel (ISRSSNEW)	193		

156.	Foreground REXX/370 Compile Panel (ISRFP14)	264	194.	Variables Panel (ISPYVPN)	312
157.	Foreground Ada/370 Compile Panel (ISRFP15)	264	195.	Tables Panel (ISPYTPI)	316
158.	Foreground AD/Cycle C/370 Compile Panel (ISRFP16)	265	196.	Display Row Panel (ISPYTPD)	319
159.	Foreground ISPD TLC Compile Panel (ISPCP01) Screen 1.	266	197.	Confirm Table Row Delete Panel (ISPYTPCD)	320
160.	Foreground ISPD TLC Compile Panel (ISPCP01) Screen 2.	266	198.	Modify Row Panel (ISPYTPM)	321
161.	Foreground ISPD TLC Compile Panel (ISPCP01) Screen 3.	267	199.	Add Row Panel (ISPYTPA)	323
162.	Foreground ISPD TLC Compile Panel (ISPCP01) Screen 4.	267	200.	Structure of Table Panel (ISPYTPSR)	325
163.	Foreground ISPD TLC Compile Panel (ISPCP01) Screen 5.	268	201.	Status of Table Panel with Table Not Open (ISPYTPS1)	326
164.	Foreground C/C++ for MVS/ESA information Panel (ISRFP19)	269	202.	Status of Table Panel with Table Open (ISPYTPS1)	327
165.	Foreground C/C++ for z/OS information Panel (ISRFP20)	269	203.	ISPF Transaction Log (ISPYLPI)	328
166.	Batch Selection Panel (ISRJPA)	271	204.	Invoke Dialog Service Panel (ISPYSI)	331
167.	Batch Selection Panel with JCL Generated (ISRJPB)	274	205.	Special Display Panel (ISPYSI2)	333
168.	Batch Assembler Panel (ISRJP01)	276	206.	Traces Panel (ISPYRI1)	334
169.	Batch COBOL Compile Panel (ISRJP02)	277	207.	Function Traces Panel (ISPYRFP)	335
170.	Batch VS FORTRAN Compile Panel (ISRJP03)	278	208.	Variable Traces Panel (ISPYRVP)	336
171.	Batch PL/I Compile Panel (ISRJP05)	279	209.	Breakpoints Panel (ISPYBP1)	338
172.	Batch VS Pascal Compile Panel (ISRJP06)	280	210.	Breakpoints Panel with Qualification Parameter Values (ISPYBP2)	340
173.	Batch Binder Linkage/Editor Panel (ISRJP07B)	281	211.	Breakpoint Primary Option Panel (ISPYXM2)	342
174.	VS COBOL II Interactive Debug Panel (ISRJP10)	282	212.	Dialog Test Tutorial - First Panel (ISP70000)	344
175.	Batch Member Parts List Panel (ISRJP12)	283	213.	Additional IBM Program Development Products Panel (ISRDIIS)	345
176.	Batch C/370 Compile Panel (ISRJP13)	284	214.	Tivoli Service Desk Panel (ISRINFO)	346
177.	Batch REXX/370 Compile Panel (ISRJP14)	284	215.	COBOL Structuring Facility Panel - Foreground Dialog (ISRDCSF)	346
178.	Batch Ada/370 Compile Panel (ISRJP15)	285	216.	Screen Definition Facility II Panel - Editors and Utilities (ISRSDSFF)	347
179.	Batch AD/Cycle C/370 Compile Panel (ISRJP16)	286	217.	Screen Definition Facility II Panel - Prototype (ISRSDSFF)	348
180.	Batch ISPD TLC Compile Panel (ISPCP01) Screen 1	286	218.	SCLM Main Menu (FLMDMN)	349
181.	Batch ISPD TLC Compile Panel (ISPCP01) Screen 2	287	219.	Workplace Entry Panel - Library View (ISRWORK1)	354
182.	Batch ISPD TLC Compile Panel (ISPCP01) Screen 3	287	220.	Workplace Entry Panel - Data Set View (ISRWORK)	355
183.	Batch ISPD TLC Compile Panel (ISPCP01) Screen 4	288	221.	Reset Statistics panel	369
184.	Batch ISPD TLC Compile Panel (ISPCP01) Screen 5	288	222.	TSO Command panel	370
185.	C/C++ for MVS/ESA Information Panel (ISRJP19)	289	223.	WS Command panel	370
186.	SOMObjects for MVS Information Panel (ISRJP20)	290	224.	ISPF Command Shell panel	371
187.	ISPF Command Shell Panel (ISRTSO)	291	225.	Move panel	372
188.	ISPF Command Shell Panel with Saved Commands (ISRTSO)	293	226.	Rename prompt panel	373
189.	Dialog Test Primary Option Panel (ISPYXD1)	298	227.	Rename data set panel	374
190.	Keylist Change Panel (ISPKLUCH)	304	228.	Rename member panel	374
191.	Invoke Dialog Function/Selection Panel (ISPYFP)	305	229.	Workplace Settings panel (ISRUSETM)	378
192.	Display Panel (ISYP1)	309	230.	Priority for Filtering Input Lines	454
193.	Message Display Panel (ISYP2)	311	231.	Find Match Example	455
			232.	Split Screen Showing Source Data for SuperC Listings	462
			233.	OVSUM Listing of a LINE Comparison of Two PDS Members.	462
			234.	DELTA Listing of a LINE Comparison of Two PDSs	463
			235.	LONG Listing of a Word Comparison of Two PDSs	464
			236.	Comparison Listing with Column Headings (Using COLHEAD)	465
			237.	Word Comparison of Two PDSs Using Change Bar to Show Differences	467
			238.	Comparison Listing with Y2000 Dates Being Compared	470

239. Side-By-Side LINE Comparison Using the NARROW Process Option	471	248. UPDLDEL Update Control Data Set	480
240. File Comparison of a Membered PDS	472	249. UPDPDEL Update Data Set Listing	481
241. File Comparison of a Complete PDS	473	250. Example of a UPDREV Update File for SCRIPT/VS Documents	482
242. Search-For Listing	473	251. Example of a UPDREV Update Data Set for BookMaster Documents	482
243. UPDCMS8 Update Data Set.	475	252. UPDSEQ0 Update Data Set	484
244. UPDCNTL Data Set Using Line Compare	476	253. UPDSUMO Data Set Using Line Compare	485
245. UPDCNTL Listing Using Word Compare	477	254. UPDSUMO Data Set Using Word Compare	486
246. UPDCNTL Listing Using Byte Compare	478	255. UPDSUMO Data Set Using Byte Compare	487
247. UPDMVS8 Update Data Set Listing	479		

Tables

1.	CUA Mode Effect on Panel Display	8	18.	SuperCE Process Options	209
2.	CUA Mode Effect on Top-Row-Displayed Indicator	8	19.	Search-For Process Options	227
3.	Log Data Set Defaults	16	20.	Expansion Triggers and Syntax.	235
4.	List Data Set Defaults	18	21.	ISRSCAN and ISRLEMX Return Codes	237
5.	ISPKYLST Key Settings	21	22.	Foreground Member Parts List Record Formats	262
6.	ISPHELP Key Settings	22	23.	ISRSCAN and ISRLEMX Return Codes	275
7.	Terminal Types	24	24.	Workstation Commands	375
8.	Default Key Settings	28	25.	Workplace Function Key Settings	377
9.	Displaying Forms of the Function Keys	35	26.	Summary of Process Options for Search and Compare	391
10.	Valid CUA Attribute Change Values	41	27.	Summary of Process Statements for Compare and Search	403
11.	Valid Point-and-Shoot Change Values	42	28.	Search-For Process Options	433
12.	Line Commands and Messages	133	29.	Summary of Search-For Process Statements	437
13.	TSO Command/CLIST/REXX EXEC Variables (Output)	138	30.	UPDCNTL Format Using Line Compare	476
14.	TSO Command/CLIST/REXX EXEC Variables (Input)	139	31.	UPDCNTL Format Using Word Compare	477
15.	Sort Fields for Source Libraries.	154	32.	UPDCNTL Format Using Byte Compare	478
16.	154	33.	UPDSUMO Format Using Line Compare	485
17.	Reset Mod Level and Reset Sequence Numbers Combinations	158	34.	UPDSUMO Format Using Word Compare	486
			35.	UPDSUMO Format Using Byte Compare	487

Preface

This book provides reference and usage information for programmers who develop applications with ISPF. It also provides conceptual and functional descriptions of ISPF.

About This Book

This book contains two parts.

The first part provides information about using ISPF options 0–10.

The second part contains the appendixes and provides:

- Descriptions of the SuperC and Search-For programs
- Descriptions and examples of the SuperC output listing formats.

Who Should Use This Book

This book is for application programmers using ISPF. Users should be familiar with coding CLISTs, REXX EXECs, or programs in the MVS environment.

What Is in This Book

Chapter 1. Settings (Option 0), describes the ISPF Settings panel and related pop-up windows. In previous releases of ISPF, the information in this chapter was contained in the *ISPF Dialog Management Guide and Reference*.

Chapter 2. View (Option 1), describes how Browse (Option 1) allows you to display source data and listings stored in ISPF libraries or other partitioned or sequential data sets. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 3. Edit (Option 2), describes how Edit (Option 2) allows you to create, display, and change data stored in ISPF libraries or other partitioned or sequential data sets. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 4. Utilities (Option 3), describes the different functions for library, data set, and catalog maintenance. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 5. Foreground (Option 4), describes how Foreground (Option 4) allows ISPF to run the foreground processors. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 6. Batch (Option 5), describes how Batch (Option 5) allows ISPF to run the batch processors. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 7. Command (Option 6), describes Command (Option 6), and how ISPF allows you to enter TSO commands, CLISTs, and REXX EXECs on the Command

line of any panel and in the **Line Command** field on data set list displays. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 8. Dialog Test (Option 7), describes how to use Dialog Test (Option 7) for testing both complete ISPF applications and ISPF dialog parts, including functions, panels, variables, messages, tables, and skeletons. In previous releases of ISPF, the information in this chapter was contained in the *ISPF Dialog Management Guide and Reference*.

Chapter 9. IBM Products (Option 9), describes the other IBM products that are supported as ISPF dialogs. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 10. SCLM (Option 10), provides an overview of the SCLM product. In previous releases of ISPF, the information in this chapter was contained in the *ISPF/PDF Guide and Reference*.

Chapter 11. ISPF Object/Action Workplace (Option 11), describes the Workplace option (Option 11).

Appendix A. SuperC Reference, provides information about the SuperC return codes, process options, update data set control options, and process statements. Appendix B. SuperC Listings gives you information to help interpret the listings that SuperC creates. In previous releases of ISPF, the information in these appendixes was contained in the *ISPF/PDF Guide and Reference*.

Appendix B. SuperC Listings, describes and displays the kinds of listings you can produce using SuperC. The sample listings shown are for illustration purposes only. They are not intended to be exact replicas because printouts of ISPF listings vary according to the kind of printer you are using. In previous releases of ISPF, the information in this appendix was contained in the *ISPF Dialog Management Guide and Reference*.

Summary of Changes

z/OS V1R2.0 ISPF contains the following changes and enhancements:

- ISPF Product and Library Changes
- ISPF Dialog Manager Component Changes (including DTL changes)
- ISPF PDF Component Changes
- ISPF SCLM Component Changes
- ISPF Client/Server Component Changes

ISPF Product Changes

Changes to the ZENVIR variable. Characters 1 through 8 contain the product name and sequence number in the format *ISPF x.y*, where x.y indicates:

- <= 4.2 means the version.release of ISPF
- = 4.3 means ISPF for OS/390 release 2
- = 4.4 means ISPF 4.2.1 and ISPF for OS/390 release 3
- = 4.5 means ISPF for OS/390 Version 2 Release 5.0
- = 4.8 means ISPF for OS/390 Version 2 Release 8.0
- = 5.0 means ISPF for OS/390 Version 2 Release 10.0
- OR
- = 5.0 means ISPF for z/OS Version 1 Release 1.0
- = 5.2 means ISPF for z/OS Version 1 Release 2.0

The ZENVIR variable is used by IBM personnel for internal purposes. The x.y numbers DO NOT directly correlate to an ISPF release number in all cases. For example, as shown above, a ZENVIR value of 4.3 DOES NOT mean ISPF Version 4 Release 3. NO stand-alone version of ISPF exists above ISPF Version 4 Release 2 Modification 1.

The ZOS390RL variable contains the ISPF release on your system.

The ZISPFOS system variable contains the level of ISPF code that is running as part of the operating system release on your system. This might or might not match ZOS390RL. For this release, the variable contains **ISPF for z/OS 01.02.00**.

New system variables:

ZDAYOFWK

The day of the week.

The ISRDDN utility is now documented in the ISPF User's Guide.

ISPF DM Component Changes

The DM component of ISPF includes the following new functions and enhancements:

- Add support for "VER(&variable,IPADDR4)".
- Add the NOSETMSG parameter to the CONTROL Service.
- Add the LFORMAT parameter to the VDEFINE Service to allow defining like format variables in a list.
- Change tutorial processing to eliminate the "End of data" message on scrollable area panels that display the entire scrollable area on the screen (no More: + - is displayed). This change eliminates the extra enter the user had to execute before continuing to the next panel.

- Issue a TSO line message when a help panel is not found and continue the dialog. Previously ISPF issued a severe error message when a help panel could not be found.
- Display a message indicating a message is not found when running in Dialog Test and allow the dialog to continue.
- Add support for extended SBCS and DBCS CCSIDs:
 - 1159 Traditional Chinese
 - 1364 Korean
 - 1371 Traditional Chinese
 - 1388 Simplified Chinese
 - 1390 Japanese
 - 1399 Japanese
- Add new Z variables to support 5 character code pages and character sets, ZTERMCP5 and ZTERMCS5 respectively.
- Add new variable ZDAYOFWK to show the day of the week.
- Enhance the Reflist function of TEST option 7.6 to allow better list management.
- Enhance Locate and Find for Dialog Test Variables (option 7.3).
- A new exec called ISPCMDTB to convert ISPF command tables to DTL.
- A new Configuration Table variable to allow SCROLL defaults.
- A new Configuration Table variable to allow STATUS AREA defaults.

ISPD TLC enhancements:

ISPD TLC changes include new invocation options, new tags, and new tag attributes as ISPF extensions to the Dialog Tag Language

General improvements:

- New invocation options:
 - no new invocation options in this release
- New tags:
 - DLDIV, DTDIV, DTHDIV for dividers within the DL tag
 - PLDIV, PTDIV for dividers within the PARML tag
- Replication added to predefined entities. For example, >SYM(5); will create the string '>>>>' in the substituted text.
- National language text strings are now accessible as entities. For example, &command; will create the string 'Command' or its translated equivalent in the substituted text.
- New ENTITY keywords COPIES, X2C and ATTR.
- New macro tag default initialization processing syntax.


```
<?dummy ?var=value>
```
- New Predefined ENTITY keywords cmdpmt (&cmdpmt;) and rprr (&rprr;).

New or changed tag attributes:

Tag name	Attribute update
CHECKI	Add support for "VER(&variable, IPADDR4)"
COMPOPT	Add ADD.

Tag name	Attribute update
DL	Add FORMAT. Support multiple DT tags for each DD tag. Change TSIZE to support multiple values. Each TSIZE value implies a DT tag.
DT	Add FORMAT, NOSKIP.
DTAFLD	Add AUTOTYPE, AUTOVOL, AUTODMEM.
HELP	Add ZUP, ZCONT.
Hn	Add COMPACT.
HP	Add INTENSE.
NOTE	Add NOSKIP.
NT	Add NOSKIP.
PANEL	Add ZUP, ZCONT, AUTONRET, AUTOTCMD.
PARML	Add FORMAT. Support multiple PT tags for each PD tag. Change TSIZE to support multiple values. Each TSIZE value implies a PT tag.
PT	Add FORMAT, SKIP.
SELFLD	Add SELCHECK.
	Support INIT=init-value for single-choice selection fields.

ISPF PDF Component Changes

The ISPF PDF component contains the following new functions and enhancements:

- A MEMBER command has been added to data set list (option 3.4) to allow the partitioned data sets in the list to be searched for a specific member.
- When the EDIT service is specified with an initial macro, parameters can now be specified for the initial macro.
- A FIND command has been added to member list to allow a string to be searched for in any of the displayed statistics.
- A SRCHFOR command has been added to data set list to allow SuperC to be invoked to search the listed data sets for strings.
- Move/Copy will now dynamically calculate the sized for the IEBCOPY SYSUT3 and SYSUT4 data sets.
- A QUERYENQ service has been added to retrieve ENQ information about a data set in use.
- LMF has been removed from the ISPF product.
- A new SuperC option FINDALL has been added to specify that all strings must be found to issue a "strings found" return code.
- LMPRINT will now allow the INDEX parameter to be specified for a record format U data set.
- Foreground and Batch now support the z/OS C/C++ compiler.

- A new AUTOTYPE command can be set to a PFKEY to retrieve a data set name or pattern entered on a panel based on data sets that start with that partial name.
- Data sets with an LRECL less than 10 bytes can be edited or viewed.
- The Edit CUT and PASTE command defaults have been added to the ISPF Configuration Table.
- The Edit CUT and PASTE default behaviors have been modified to use CUT REPLACE and PASTE KEEP.
- The BARRIER keyword has been added to the SELECT for Edit macros.
- A program called ISREMSPY that can be invoked from an Edit macro to display the current Edit data.
- The Edit macro commands CURSOR, LINENUM and DISPLAY_LINES can retrieve line numbers greater than 999999.

ISPF SCLM Component Changes

The ISPF SCLM component contains the following new functions and enhancements:

- Several enhancements to the Library Utility:
 - A member action to initiate Promotion on a member.
 - REFRESH command to update the member list contents.
 - HIER ON|OFF command to switch between full hierarchy view and single group view.
 - Edit action can create a new member when entered on the command line.
 - Ability to select deletion of accounting data or build map only.
- New FLMLRBLD macro to select automated rebuild for members with a specified language on promotion to listed groups.
- Improved edit models for SCLM services.
- VOL keyword on the FLMCPYLB and FLMSYSLB macros allowing reference to uncatalogued data sets.
- VIO keyword on the FLMALLOC macro to override the SCLM-calculated default unit of DASD or VIO for temporary data sets.
- Supplied parsers and translators are all loaded RMODE(31).

ISPF Client/Server Component Changes

The ISPF Client/Server Component enables a panel to be displayed unchanged (except for panels with graphic areas) at a workstation using the native display function of the operating system of the workstation. ISPF manuals call this "running in GUI mode."

There are no changes to the ISPF Client/Server for this release.

ISPF User Interface Considerations

Many changes have been made to the ISPF Version 4 user interface to conform to CUA guidelines. If you prefer to change the interface to look and act more like the Version 3 interface, you can do the following:

- Use the CUAATR command to change the screen colors
- Use the ISPF Settings panel to specify that the TAB or HOME keys position the cursor to the command line rather than to the first action bar item

- Set the command line to the top of the screen by deselecting *Command line at bottom* on the ISPF Settings panel
- Set the primary keys to F13–24 by selecting 2 for Primary range on the Tailor Function Key Definition Display panel
- Use the KEYLIST OFF command to turn keylists off
- Use the PSCOLOR command to change point-and-shoot fields to blue.
- Change the DFLTCOLR field in the PDF configuration table ISRCONFG to disable action bars and or edit highlighting

ISPF Migration Considerations

When migrating to OS/390 V2R8.0 or higher for the first time, you must convert your ISPF customization to the new format. Refer to the section entitled *The ISPF Configuration Table* in the *ISPF Planning and Customizing manual*.

When migrating from one version of ISPF to another, you must be sure to reassemble and re-link the SCLM project definition.

Note: If you are migrating to z/OS V1R2.0 from OS/390 V2R10.0, there are no migration actions necessary. If you are migrating to z/OS V1R2.0 from a prior release of OS/390, follow the migration actions for OS/390 V2R10.0.

ISPF Profiles

Major changes were made to the ISPF profiles for ISPF Version 4.2 and OS/390 Version 1 Release 1.0 ISPF. The profiles for ISPF Version 3 and the profiles for OS/390 ISPF are not compatible. If you are moving back and forth between an ISPF Version 3 system and OS/390 V1R1.0 or higher system, you must run with separate profiles. Profiles for OS/390 V1R1.0 and higher are compatible with each other.

Year 2000 Support for ISPF

ISPF is fully capable of using dates for the year 2000 and beyond. All of your existing applications should continue to run (some may need minor changes, as explained below) when the year 2000 comes. The base support for the year 2000 was added to OS/390 Version 1 Release 2.0, but the same level of support is available for ISPF Version 3.5, ISPF Version 4, and OS/390 Version 1 Release 1.0 as well. To get support for the earlier versions, be sure that your system has the correct APARs installed. All ISPF APARs that add or correct function relating to the year 2000 contain the YR2000 identifier in the APAR text. You should search for these APARs to ensure you have all the function available.

What function is included?

- ISPF Dialog variable ZSTDYEAR now correctly shows the year for dates past 1999. Earlier versions always showed the first 2 characters of the year as 19.
- A new ISPF dialog variable (ZJ4DATE) is available for Julian dates with a 4-digit year.
- An ISPF Configuration Table field enables PDF to interpret 2 character year dates as either a 19xx or 20xx date. The default value is 65. Any 2-character year date whose year is less than or equal to this value is considered a 20xx date, anything greater than this value is considered 19xx. To see what value has been set by the ISPF Configuration Table, use the new ZSWIND variable.
- New parameters in the LMMSTATS service (CREATED4 and MODDATE4) for specifying 4-character year dates. All existing parameters still exist and you can

continue to use them. If both the 2-character year date parameters (CREATED and MODDATE) and the 4-character year date parameters (CREATED4 and MODDATE4) are specified, the 2-character versions are used.

- Dialog variables ZLC4DATE and ZLM4DATE have been added.
 - You *can* set them before making an LMMREP or LMMADD call. Do this to specify a 4-character *created* or *last modified* date to set in the ISPF statistics.
 - They *are* set by LMMFIND, LMMLIST and LMMDISP to the current value of the created and last modified dates in the ISPF statistics.

What might need to change? Some minor changes to your existing ISPF dialogs might be necessary, especially in ISPF dialogs that use the Library Access Services to manipulate ISPF member statistics.

- For those services that accept both 4-character year dates and 2-character year dates, you can specify one or the other. If you specify both, the 2-character year date is used to avoid affecting existing dialogs. When the 2-character year date is used, the configuration table field mentioned above is used to determine whether the date should be interpreted as 19xx or 20xx.
- ISPF will not necessarily show 4-character dates in all circumstances but it will process them correctly. For example, a member list might only display 2-character year dates but will sort those dates in the proper order.
- SCLM stores dates past the year 1999 in a new internal format. If an accounting file contains dates in this new format, it cannot be processed by a system without year 2000 support. Accounting files without dates past 1999 can be processed with or without the year 2000 support.
- LMF has been removed from the ISPF product. For information about how to convert from LMF to SCLM refer to the *ISPF Planning and Customizing* manual.

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What's in the z/OS V1R2.0 ISPF library?

You can order the ISPF books using the numbers provided below.

z/OS V1R2.0 ISPF

Title	Order Number
<i>z/OS V1R2.0 ISPF Dialog Tag Language Guide and Reference</i>	SC34-4824-01
<i>z/OS V1R2.0 ISPF Planning and Customizing</i>	GC34-4814-01
<i>z/OS V1R2.0 ISPF User's Guide Volume I</i>	SC34-4822-01
<i>z/OS V1R2.0 ISPF User's Guide Volume II</i>	SC34-4823-01
<i>z/OS V1R2.0 ISPF Services Guide</i>	SC34-4819-01
<i>z/OS V1R2.0 ISPF Dialog Developer's Guide and Reference</i>	SC34-4821-01
<i>z/OS V1R2.0 ISPF Reference Summary</i>	SC34-4816-01
<i>z/OS V1R2.0 ISPF Edit and Edit Macros</i>	SC34-4820-01
<i>z/OS V1R1.0 ISPF Library Management Facility</i>	SC34-4825-01
<i>z/OS V1R2.0 ISPF Messages and Codes</i>	SC34-4815-01
<i>z/OS V1R2.0 ISPF Software Configuration and Library Manager Project Manager's and Developer's Guide</i>	SC34-4817-01
<i>z/OS V1R2.0 ISPF Software Configuration and Library Manager Reference</i>	SC34-4818-01
Entire library Bill of Forms	SBOF-8570

Elements and Features in z/OS

You can use the following table to see the relationship of a product you are familiar with and how it is referred to in z/OS Version 1 Release 2.0. z/OS V1R2.0 is made up of elements and features that contain function at or beyond the release level of the products listed in the following table. The table gives the name and level of each product on which a z/OS element or feature is based, identifies the z/OS name of the element or feature, and indicates whether it is part of the base or optional. For more compatibility information about z/OS elements see *z/OS Planning for Installation, GC28-1726*

Product Name and Level	Name in z/OS	Base or Optional
BookManager BUILD/MVS V1R3	BookManager BUILD	optional
BookManager READ/MVS V1R3	BookManager READ	base
MVS/Bulk Data Transfer V2	Bulk Data Transfer (BDT)	base
MVS/Bulk Data Transfer File-to-File V2	Bulk Data Transfer (BDT) File-to-File	optional
MVS/Bulk Data Transfer SNA NJE V2	Bulk Data Transfer (BDT) SNA NJE	optional
IBM OS/390 C/C++ V1R2	C/C++	optional
DFSMSdfp V1R3	DFSMSdfp	base
DFSMSdss	DFSMSdss	optional
DFSMSHsm	DFSMSHsm	optional
DFSMSrmm	DFSMSrmm	optional
DFSMS/MVS Network File System V1R3	DFSMS/MVS Network File System	base
DFSORT R13	DFSORT	optional
EREP MVS V3R5	EREP	base
FFST/MVS V1R2	FFST/MVS	base
GDDM/MVS V3R2 • GDDM-OS/2 LINK • GDDM-PCLK	GDDM	base
GDDM-PGF V2R1.3	GDDM-PGF	optional
GDDM-REXX/MVS V3R2	GDDM-REXX	optional
IBM High Level Assembler for MVS & VM & VSE V1R2	High Level Assembler	base
IBM High Level Assembler Toolkit	High Level Assembler Toolkit	optional
ICKDSF R16	ICKDSF	base
ISPF	ISPF	base
Language Environment for MVS & VM V1R5	Language Environment	base
Language Environment V1R5 Data Decryption	Language Environment Data Decryption	optional

Product Name and Level	Name in z/OS	Base or Optional
MVS/ESA SP V5R2.2		
BCP	BCP or MVS	base
ESCON Director Support	ESCON Director Support	base
Hardware Configuration Definition (HCD)	Hardware Configuration Definition (HCD)	base
JES2 V5R2.0	JES2	optional
JES3 V5R2.1	JES3	base
LANRES/MVS V1R3.1	LANRES	base
IBM LAN Server for MVS V1R1	LAN Server	base
MICR/OCR Support	MICR/OCR Support	base
OS/390 UNIX System Services	OS/390 UNIX System Services	base
OS/390 UNIX Application Services	OS/390 UNIX Application Services	base
OS/390 UNIX DCE Base Services (OSF DCE level 1.1)	OS/390 UNIX DCE Base Services	base
OS/390 UNIX DCE Distributed File Services (DFS) (OSF DCE level 1.1)	OS/390 UNIX DCE Distributed File Services (DFS)	optional
OS/390 UNIX DCE User Data Privacy	OS/390 UNIX DCE User Data Privacy	optional
SOMobjects Application Development Environment (ADE) V1R1	SOMobjects Application Development Environment (ADE)	
SOMobjects Runtime Library (RTL)	SOMobjects Runtime Library (RTL)	base
SOMobjects service classes	SOMobjects service classes	base
Open Systems Adapter Support Facility (OSA/SF) R1	Open Systems Adapter Support Facility (OSA/SF)	base
MVS/ESA RMF V5R2	RMF	optional
OS/390 Security Server	Resource Access Control Facility (RACF) <ul style="list-style-type: none"> • DCE Security Server • OS/390 Firewall Technologies • Lightweight Directory Access Protocol (LDAP) Client and Server • Open Cryptographic Enhanced Plug-ins (OCEP) 	optional
SDSF V1R6	SDSF	optional
SMP/E	SMP/E	base
	Softcopy Print	base
SystemView for MVS Base	SystemView for MVS Base	base
IBM TCP/IP V3R1 <ul style="list-style-type: none"> • TCP/IP CICS Sockets • TCP/IP IMS Sockets • TCP/IP Kerberos • TCP/IP Network Print Facility (NPF) • TCP/IP OS/390 Communications Service IP Applications • TCP/IP OS/2 Offload 	TCP/IP <ul style="list-style-type: none"> • TCP/IP CICS Sockets • TCP/IP IMS Sockets • TCP/IP Kerberos • TCP/IP Network Print Facility (NPF) • TCP/IP OS/390 Communications Service IP Applications • TCP/IP OS/2 Offload 	<ul style="list-style-type: none"> • optional • optional • optional • optional • optional • optional
TIOC R1	TIOC	base
Time Sharing Option Extensions (TSO/E) V2R5	TSO/E	base

Product Name and Level	Name in z/OS	Base or Optional
VisualLift for MVS V1R1.1	<ul style="list-style-type: none"> • VisualLift Run-Time Environment (RTE) • VisualLift Application Development Environment (ADE) 	<ul style="list-style-type: none"> • base • optional
VTAM V4R3 with the AnyNet feature	VTAM	base
3270 PC File Transfer Program V1R1.1	3270 PC File Transfer Program	base

Part 1. ISPF Options

Chapter 1. Settings (Option 0)	5
ISPF Settings Panel Fields	6
Select Options	6
Terminal Characteristics	9
Print GraphicsParms	10
General	12
ISPF Settings Panel Action Bar	13
Specifying Log and List Defaults and Characteristics (The Log/List Action Bar Choice)	15
Log Data Set Defaults	15
List Data Set Defaults	17
List Data Set Characteristics	18
JCL	20
Working with Function Keys and Keylists (The Function Keys Action Bar Choice)	21
ISPF Default Keylist	21
ISPF Default Keylist for Help Panels	22
Non-Keylist PF Key Settings	23
Keylist Settings	26
Tailor Function Key Definition Display	33
The Function Keys Pull-Down	34
Choices For Changing PF Key Definitions	34
Choices For Showing PF Keys on the Display Screen	35
Choices for Determining Who Can Use Your PF Keylist	35
Choices for Enabling Keylists	35
Changing Default Colors (The Colors Action Bar Choice)	35
Global Colors	36
CUA Attributes	40
Point-and-Shoot	41
Specifying ISPF ENVIRON Settings (The Environ Action Bar Choice)	42
Specifying Workstation Parameters (The Workstation Action Bar Choice)	43
Workstation Connection	44
GUI Panel Settings	50
Workstation Tool Integration	52
Download ISPF C/S Component	52
Disconnect from the Workstation	52
Displaying Screen Name, Message Identifiers, and Panel Identifiers (The Identifier Action Bar Choice)	52
Screen Name	52
Message Identifier	53
Panel Identifier	55
Chapter 2. View (Option 1)	59
View Entry Panel Action Bar	60
View Entry Panel Fields	61
Browsing a Data Set	62
Ending Browse	62
Browse Primary Commands	63
BROWSE—Browsing Recursively	63
COLUMNS—Identifying Columns	64
DISPLAY—Controlling the Display	64
EDIT—Editing a Member	65
FIND—Finding Character Strings	66
HEX—Displaying Data in Hexadecimal Format	70
LOCATE—Locating Lines	71
RESET—Removing the Column-Identification Line	72
SUBMIT—Submitting a Job Stream	72
VIEW—Viewing a Member	72
Chapter 3. Edit (Option 2)	75
Editing a Data Set	76
Edit Entry Panel Action Bar	77
Edit Entry Panel Fields	77
Chapter 4. Utilities (Option 3)	81
Utility Selection Panel Action Bar	81
Library Utility (Option 3.1)	82
Library Utility Panel Action Bar	82
Library Utility Panel Fields	83
Library Utility Options for Data Sets	83
Blank — (Display Member List)	83
C — Compress Data Set	85
X — Print Index Listing	85
L — Print Entire Data Set	85
I — Data Set Information	85
S — Short Data Set Information	89
Library Utility Options for Members	92
B — Browse Member	92
C — Copy Member	92
D — Delete Member	92
E — Edit Member	93
G — Reset Member	93
M — Move Member	93
P — Print Member	93
R — Rename Member	93
T — TSO Command for Member	93
V — View Member	93
W — WS Command for Member	93
Data Set Utility (Option 3.2)	93
Data Set Utility Panel Action Bar	94
Data Set Utility Panel Fields	95
Data Set Utility Options	95
A — Allocate New Data Set	95
Allocation Errors	101
C — Catalog Data Set	102
R — Rename Entire Data Set	102
U — Uncatalog Data Set	105
D — Delete Entire Data Set	106
S — Data Set Information (Short)	108
Blank — (Data Set Information)	108
V — VSAM Utilities	109
Move/Copy Utility (Option 3.3)	115
Move/Copy Utility Panel Action Bar	116
Move/Copy Utility Panel Fields	116

Move/Copy Utility Options	117	Reset ISPF Statistics Panel Action Bar	156
C and CP — Copying Data Sets	117	Reset ISPF Statistics Panel Fields	156
M and MP — Moving Data Sets	119	Reset ISPF Statistics Utility Options	157
Using the Move/Copy Utility without Load		R — Reset (Create/Update) ISPF Statistics	158
Modules	120	D — Delete ISPF Statistics	158
Using the Move/Copy Utility with Load		Results of Resetting Statistics	158
Modules	120	Hardcopy Utility (Option 3.6)	159
Moving or Copying Alias Entries	122	Hardcopy Utility Panel Action Bar	159
Member List Processing When Using		Hardcopy Utility Panel Fields	160
IEBCOPY	122	Generating and Submitting JCL	160
Data Set List Utility (Option 3.4)	123	Additional Batch Printing Information	162
Data Set List Utility Panel Action Bar	123	Using the TSO/E Information Center Facility	162
Data Set List Utility Panel Fields	124	Download Data Set to Workstation Utility (Option	
Dsname Level	124	3.7)	164
Volume Serial	126	Selection 1 — ISPF C/S	164
Initial View	126	File Transfer Protocol (FTP) Download	166
Data Set List Utility Options	128	ISPF Client/Server (C/S) Download	168
Blank Display Data Set List	128	Manual Download	169
P — Print Data Set List	139	Running the Installation Program (ISPFINST)	170
V — Display VTOC Information	139	Starting an ISPF C/S Session (OS/2)	171
PV — Print VTOC Information	141	Starting an ISPF C/S Session (Windows)	172
Data Set List Utility Line Commands	141	Starting an ISPF C/S Session (UNIX — AIX,	
E — Edit Data Set	142	HP, Solaris)	172
V — View Data Set	143	Ending an ISPF GUI Session	173
B — Browse Data Set	143	The Workstation Agent Window	174
M — Display Member List	143	Selection 2—Data Set	178
D — Delete Data Set	145	Outlist Utility (Option 3.8)	179
R — Rename Data Set	145	Outlist Utility Panel Action Bar	180
I — Data Set Information	145	Outlist Utility Panel Fields	180
S — Information (Short)	145	Outlist Utility Options	181
P — Print Data Set	145	L — List Job Names/ID(s) via the TSO	
C — Catalog Data Set	145	STATUS Command	181
U — Uncatalog Data Set	146	D — Delete Job Output from SYSOUT Hold	
Z — Compress Data Set	146	Queue	181
F — Free Unused Space	146	P — Print Job Output and Delete from	
PX — Print Index Listing	146	SYSOUT Hold Queue	181
RS — Reset	146	R — Requeue Job Output to a New Output	
MO — Move	146	Class	182
CO — Copy	146	Blank — Display Job Output	182
RA — RefAdd	147	Command Table Utility (Option 3.9)	182
X — Exclude Data Set	147	Command Table Utility Panel Fields	183
NX — Unexclude Data Set	147	Scrolling a Command Table	185
NXF — Unexclude First Data Set	147	Saving a Command Table	185
NXL — Unexclude Last Data Set	147	Cancelling a Command Table	185
= — Repeat Last Command	147	Using Command Table Line Commands	185
Data Set List Utility Primary Commands	147	D — Deleting Lines	186
APPEND Command	148	E — Editing Lines	186
CONFIRM Command	148	I — Inserting Lines	186
EXCLUDE Command	148	R — Repeating Lines	186
FIND and RFIND Commands	149	V — Viewing Lines	186
LC Command	149	Format Specifications Utility (Option 3.11)	186
LOCATE Command	150	Format Specifications Panel Action Bar	187
MEMBER Command	150	Format Specifications Panel Fields	187
REFRESH Command	151	Format Specifications Panel Options	188
RESET Command	151	A — Add a New Format	188
SAVE Command	151	C — Copy Formats	189
SHOWCMD Command	152	D — Delete a Format	190
SORT Command	153	U — Update a Format	190
SRCHFOR Command	154	L or BLANK — Display Format List	190
VA, VS, VT, and VV Commands	155	Format Selection List Commands	191
Reset ISPF Statistics Utility (Option 3.5)	155	Deleting a Format	191

Locating Format Names	191	Using SCRIPT/VS with the TSO/E Information Center Facility	253
Renaming a Format	191	VS COBOL II Interactive Debug (Option 4.10)	254
Sorting Format Names	192	OS/VS COBOL Debug (Option 4.10A)	255
Updating or Selecting a Format	192	COBOL Debug Processing Sequence.	256
SuperC Utility (Option 3.12)	192	Symbolic Debug Data Sets	257
SuperC Utility Panel Action Bar	193	Print Output Data Sets	257
SuperC Utility Panel Fields	194	FORTRAN Debug (Option 4.11)	258
SuperC Member Lists	197	Member Parts List (Option 4.12)	259
Submitting a SuperC Job in Batch Mode	199	Member Not Found	263
Using the NOLIST Listing Type in Batch Mode	201	C/370 Compile (Option 4.13)	263
SuperCE Utility (Option 3.13)	202	REXX/370 Compile (Option 4.14).	263
SuperCE Utility Panel Action Bar.	203	Ada/370 Compile (Option 4.15)	264
SuperCE Utility Panel Fields	203	AD/Cycle C/370 Compile (Option 4.16)	265
SuperCE Utility Options.	207	ISPDTLC (Option 4.18)	265
Foreground Compare Data Sets	207	OS/390 C/C++ Compile (Option 4.19)	268
Batch Submit Batch Data Set Compare	208	z/OS C/C++ Compile (Option 4.20).	269
Process Options - Select Process Options	209		
Edit Statements - Edit Statements Data Set	210	Chapter 6. Batch (Option 5)	271
Profiles and Defaults - Activate Profiles and Defaults	211	Batch Selection Panel Action Bar	271
Search-For Utility (Option 3.14)	215	Batch Processing Sequence	272
Search-For Utility Panel Action Bar	216	JCL Generation—Compilers	274
Search-For Utility Panel Fields.	216	JCL Generation—Assemblers and Linkage Editor	276
Specifying Additional Search Strings	218	Assembler (Option 5.1)	276
Search-For Strings and Keywords.	219	COBOL Compile (Option 5.2)	277
Entering Search Strings	219	VS FORTRAN Compile (Option 5.3).	278
Using Keywords	219	PL/I Compile (Option 5.5)	279
Search-For Member Lists	220	VS Pascal Compile (Option 5.6)	279
Submitting a Search-For Job in Batch Mode	220	Binder/Linkage Editor (Option 5.7)	280
Search-ForE Utility (Option 3.15)	221	VS COBOL II Interactive Debug (Option 5.10)	282
Search-ForE Utility Panel Action Bar	222	Member Parts List (Option 5.12)	283
Search-ForE Utility Panel Fields	222	C/370 Compile (Option 5.13)	283
Select Search-For Process Options	227	REXX/370 Compile (Option 5.14).	284
Edit Search-For Statements Data Set.	227	Ada/370 Compile (Option 5.15)	285
		AD/Cycle C/370 Compile (Option 5.16)	285
Chapter 5. Foreground (Option 4)	229	ISPDTLC Compile (Option 5.18)	286
Foreground Selection Panel Action Bar	229	C/C++ for MVS/ESA Compile (Option 5.19).	288
Foreground Processing Sequence	230	z/OS C/C++ Compile (Option 5.20).	289
Expanding Packed Data	233		
Member Expansion (ISRLEMX)	234	Chapter 7. Command (Option 6)	291
Restrictions on Member Expansion and Member Parts Lists	235	ISPF Command Shell Panel Action Bar	291
Member Expansion ISRLEMX Return Codes	237	The ISPF Command Shell Panel Saved Command Area	293
Trigger Statement Errors.	237	Entering TSO Commands, CLISTs, and REXX EXECs.	293
Input Data Sets.	237	Rules for Entering TSO Commands	294
List Data Sets	238	Rules for Entering CLISTs and REXX EXECs	294
Password Protection	239	Using the Session Manager.	294
Object Data Sets	239		
Foreground—TSO/E Information Center Facility	240	Chapter 8. Dialog Test (Option 7)	297
Assembler (Option 4.1)	240	The Dialog Test Environment	297
COBOL (Option 4.2)	241	Dialog Test Primary Option Panel Action Bar	299
VS FORTRAN Compile (Option 4.3).	242	Using Variables.	300
PL/I (Option 4.5)	243	Severe Error Handling	300
VS Pascal Compile (Option 4.6)	244	Commands	301
Binder/Linkage Editor (Option 4.7)	245	Ending the Current Option without Saving Changes	303
Linkage Editor Concatenation Sequence	247	Saving Changes	303
SCRIPT/VS Processor (Option 4.9)	247	Finding a Character String	303
SCRIPT/VS Processing Sequence.	248	Displaying Breakpoint Qualification Data	303
Selecting a Formatting Style	251	Restoring the Format of the Breakpoints Panel	303
Changing Style Options	252		

Dialog Test Line Commands	303
D – Deleting Lines	303
I – Inserting Lines	304
R – Repeating Lines	304
Setting a Keylist for Dialog Test	304
Functions (Option 7.1)	305
Invoke Dialog Function/Selection Panel Action Bar	306
Invoke Dialog Panel Fields	306
Panels (Option 7.2)	308
Display Panel Action Bar	309
Display Panel Fields	309
Variables (Option 7.3).	311
Variables Panel Action Bar	312
Variables Panel Fields	313
Variables Commands	313
Manipulating Variables	313
Creating New Variables	314
Deleting Variables	314
Variables Usage Notes	314
Tables (Option 7.4)	315
Tables Panel Action Bar	316
Tables Panel Fields	317
Tables Panel Options	318
1—Display row	318
2—Delete row	319
3—Modify row	320
4—Add row	322
5—Display structure	324
6—Display status	325
Log (Option 7.5)	328
ISPF Transaction Log Not Available	329
Trace Output in ISPF Log	329
Trace Header Entries	329
Function Trace Entries	329
Variable Trace Entries	330
Dialog Services (Option 7.6)	330
Invoke Dialog Service Panel Action Bar.	331
Special Display Panel.	332
Traces (Option 7.7)	333
1—Function Traces	334
Function Traces Commands	336
2—Variable Traces	336
Variable Traces Commands	337
Breakpoints (Option 7.8).	337
Specifying Breakpoints	338
Breakpoints Panel Action Bar	338
Breakpoints Panel Fields.	339
Breakpoints Commands	339
Qualification Parameter Values	339
Finding a Breakpoint	341
Tutorial (Option 7.T)	343
Exit (Option 7.X)	344

Chapter 9. IBM Products (Option 9)	345
Tivoli Service Desk for OS/390(Option 9.3)	345
COBOL/SF-F (Option 9.4)	346
SDF II (Option 9.6)	347
SDF II-P (Option 9.7)	347

Chapter 10. SCLM (Option 10)	349
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SCLM Main Menu Action Bar	349
SCLM Overview	350

Chapter 11. ISPF Object/Action Workplace (Option 11)	353
Selecting Objects	353
Workplace Entry Panel	353
Library View	354
Data Set View	354
ISPF Referral Lists for Object Retrieval	355
Specifying Actions.	356
Choices on the Workplace Action Bar	356
File.	356
View	363
Options	364
Space	364
SuperC	366
Test.	367
Help	368
Actions That Require Prompt Windows for More Information	368
Resetting Member Statistics.	368
TSO Command.	369
WS Command	370
ISPF Command Shell.	371
Move or Copy	372
Rename	373
Commands	375
Default CUA Function Key Settings	377
Changing Workplace Settings	377
Workplace Settings Panel Action Bar	379
Workplace Example Scenario	381
Subtask 1.	381
Subtask 2.	382
Subtask 3.	382
Subtask 4.	383

Chapter 1. Settings (Option 0)

The Settings option allows you to display and change a variety of ISPF parameters at any time during the ISPF session. Changes remain in effect until you change the parameter again, and ISPF saves them from session to session.

This chapter explains how to use the fields on the ISPF Settings panel and the action bar choices. Some of the things you can specify are:

- Terminal characteristics
- Default options for processing the ISPF list and log data sets
- Function key assignments
- Placement of command lines
- List data set characteristics
- GDDM graphic print parameters
- Keylist modifications
- Dialog Test option
- Default colors
- Values of CUA panel elements
- Point-and-shoot color and highlight changes
- ENVIRON command options.

This facility can be started from any command line with the `SETTINGS` command, from the **Settings** choice on the Menu pull-down on any action bar where it is available, or by selecting option 0 on the ISPF Primary Option Menu. Typically, the Settings facility should be included as an option on an application's primary option menu or as a choice on a pull-down on an application's primary option menu.

If you select option 0 on the ISPF Primary Option Menu, the panel shown in Figure 1 is displayed.

Settings (Option 0)

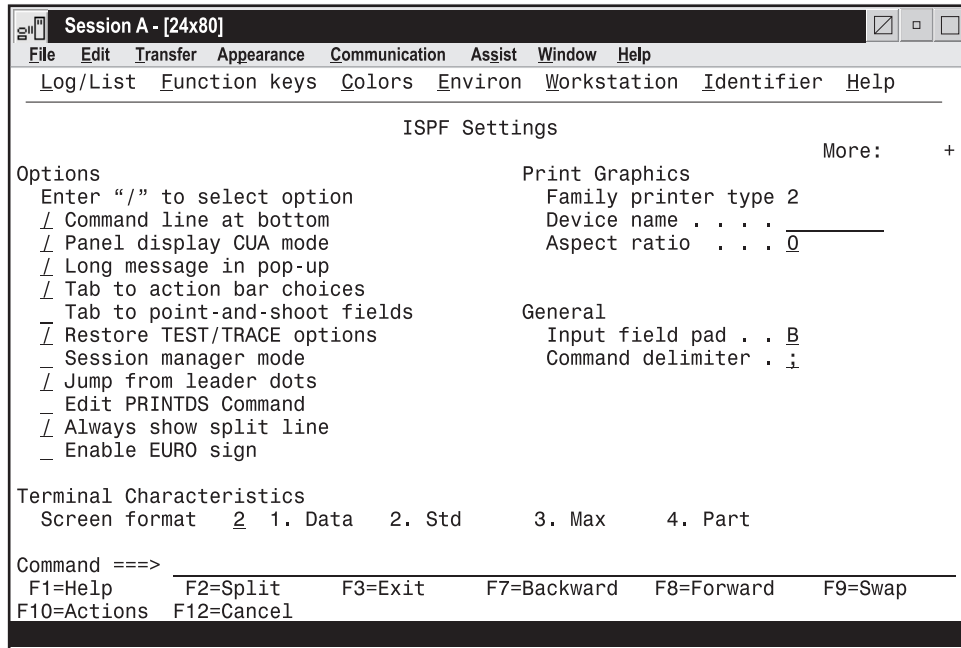


Figure 1. ISPF Settings Panel (ISPISEMMN)

ISPF Settings Panel Fields

The former ISPFParms panels have been consolidated into fewer panels so that you can view most of the settings at the same time, rather than having to search for related information on a number of panels. The ISPF Settings panel contains settings formerly addressed by options 0.1 (Terminal Characteristics), 0.4 (Display Characteristics), 0.6 (Print Graphics Parameters), and 0.9 (Dialog Test Option), as well as new display characteristic settings.

Figure 1 shows the initial defaults. The display or the field-level help indicates the allowable alternatives for these defaults. The values shown in Figure 1 are for an ISPF session in the English language. The corresponding panel displayed for a non-English session is similar, but the accepted terminal types can be different.

Select Options

Use a slash to select the following options:

- Command line at bottom
- Panel display CUA mode
- Long message in pop-up
- Tab to action bar choices
- Tab to point-and-shoot fields
- Restore TEST/TRACE options
- Session Manager mode
- Jump from leader dots
- Edit PRINTDS Command
- Always show split line
- Enable EURO sign (currency symbol).

Blank out the slash to deselect an option; each option is described below.

Command line at bottom

Specifies that the command line is to appear at the bottom of each logical screen. If you have specified that the panel should be displayed in CUA mode, the command line placement defaults to the bottom.

Notes:

1. The default is to have the command line placement at the bottom. However, if your current application profile table specifies ASIS, the default does not override it.
2. If you deselect this field, the command line appears as specified in the panel definition statements. Unless indicated in the panel definition, it appears at the top of the panel.

When you select the Command line at bottom option, the following changes take place:

- The command line moves to the last line of the logical screen or the line above the function keys depending on the CUA mode setting (see Table 1 on page 8).
- Each line that follows the command line shifts up one line.
- The long message overlays the line above the new command line location.

If the command line for a table display panel has been moved to the bottom and if no alternate placement has been specified for the long message line, the line directly above the repositioned command line is reserved (left blank) for the display of long messages. Otherwise, if you enter erroneous data on that line, a long message could overlay that data.

- In general, the display location of the function key definitions depends on several variables.
 - If the panel display mode CUA option is not selected, and the KEYLIST option is set to OFF, the function key definitions display on the lines immediately above the long message line.
 - If the panel display mode CUA option is on, and the KEYLIST option is set to OFF, the function key definitions display below the long message line.
 - If the KEYLIST option is set to ON, and the panel definition does not contain a)Panel statement, the positioning of the function keys depends on the CUA mode setting.
 - If the KEYLIST option is set to ON, and the panel definition contains a)Panel statement, the positioning of the function keys is below the long message line.

If the Panel display CUA mode option is not selected, an exception to this situation occurs when an alternate placement for the long message line has been specified using the LMSG keyword on the)BODY header statement. Under these circumstances, the function key definitions display immediately above the command line.

If a conflict occurs between the placement of the function key definition lines and those that are to display long messages, short messages, and/or commands, the function keys will not overlay the command line, the line containing the long or short message field, or any line above one of these fields. Because of this condition, function key definition lines cannot appear at all on some screens.

Settings (Option 0)

When using the GDDM interface to display panels, the position of a graphics field does not change if the command line moves to the bottom of the screen.

In split-screen mode, if the top screen specifies the Command line at bottom option, the command line is moved to the line directly above the split line, and the long message line overlays the line above the command line. Because the placement setting is stored in the application profile pool, the setting for each logical screen is the same unless a user is running different applications in each screen.

Panel display CUA mode

Specifies that panels be displayed in CUA mode. This selection affects how the long message line, command line, and function keys are displayed, as described in Table 1.

Table 1 summarizes how the command, long message, and function key area appear on the panel depending on whether or not you select the Panel display in CUA mode option. Note that the table uses the system default to position the long message field. An alternate long message field is not defined using the LMSG keyword on the)BODY header statement.

Table 1. CUA Mode Effect on Panel Display

Panel Characteristic	CUA mode selected	CUA mode not selected
Command line at bottom	Long message line Command line Fn=name	PF n=name Long message line Command line
Command line at bottom deselected	Title/short message Command line Long message line : : Fn=name	Title/short message Command line Long message line : : PF n=name

Table 2 summarizes the effect of CUA mode on the top-row-displayed indicator.

Table 2. CUA Mode Effect on Top-Row-Displayed Indicator

CUA Mode	Rows	Top-Row-Displayed Message	Message ID
YES	ALL	Row x to z of y	ISPZZ102
YES	SCAN	Row x From y	ISPZZ103
NO	ALL	Row x of y	ISPZZ100
NO	SCAN	Row x of y	ISPZZ100

Long message in pop-up

Specifies that long messages will be displayed in a pop-up window, regardless of the .WINDOW setting in the message source.

Tab to action bar choices

Specifies that you want to use the Tab key to move the cursor among the action bar choices.

Note: You cannot use the Tab key for this purpose if you are running in GUI mode.

Tab to point-and-shoot fields

Specifies that you want to use the Tab key to move the cursor through the point-and-shoot fields on a panel.

Note: You cannot use the Tab key for this purpose if you are running in GUI mode.

Restore TEST/TRACE options

When you select Dialog Test facility (option 7), certain TEST and TRACE options are established that can be different than those specified during ISPF start up. If you select Restore TEST/TRACE options, the TEST or TRACE values are restored to the ISPF call values when you exit dialog test. If you deselect the field, the TEST or TRACE values are not restored when you exit dialog test.

For more information about dialog test, see Chapter 8. Dialog Test (Option 7).

Session Manager mode

Enter a slash to indicate that the Session Manager should handle any line mode output from the processing program.

Jump from leader dots

Enter a slash to enable the ISPF jump function from field prompts that have leader dots (. . or ...). Field prompts that have the ==> will always have the jump function enabled.

If the application developer defines the NOJUMP(ON) attribute keyword on a specific input field, this disables the "Jump from leader dots" and takes precedence over the selected Settings "Jump from leader dots" or the configuration table setting of "YES" for "Jump from leader dots".

Edit PRINTDS Command

Enter a slash to intercept the local print request to allow you to modify the statement before the PRINTDS command begins. See the **Editing the PRINTDS Command** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for additional information.

Always show split line

Specifies that the split line in split screen mode, as seen on a 3270 display, should always be shown. The default for this option is that the option is selected. By deselecting this option, the split line does not display when the screen is split at the top or the bottom of the screen.

Enable EURO Sign

Enter a slash to enable the EURO sign (currency symbol). Your terminal or emulator must support the EURO sign for this option to work.

Terminal Characteristics

The Terminal Characteristics portion of the ISPF Settings panel allows you to specify values for the following terminal characteristics:

- Screen format
- Terminal type.

Each of these characteristics is described below.

Screen format

Specification of screen format applies to 3278 Model 5 (or 3180 set to a mode that emulates the 3278 Model 5) and 3290 terminals only. ISPF ignores screen format for other types of terminals.

Settings (Option 0)

Data	Format is based on data width (for a 3278 Model 5 only).
Std	Format is always 24 x 80 characters.
Max	Format is always 27 x 132 characters.
Part	Format uses hardware partitions (3279 only).

Note: If you are in an Edit session or you are using the EDIT service, ISPF will not allow you to change the screen format.

Terminal type

Specify a valid terminal type. If you are using a terminal emulator, select the type of terminal that is being emulated (more than likely, a 3278 or 3278x).

Specification of a terminal type allows ISPF to recognize valid (displayable) characters. You should keep in mind that the terminal type value that you specify to ISPF might not be the actual terminal type. For example, if your terminal is a 3279, you specify 3278 because a 3279 terminal has the same character set as a 3278. The keyboard character sets for the specified terminal and the actual terminal are always compatible.

The terminal type designations in the text of this book are often the value to be specified to ISPF rather than the actual terminal type.

For a list of ISPF-supported terminal types, refer to *ISPF Planning and Customizing*. For specific information about the type value to specify to ISPF for each supported terminal, start Help from the ISPF Settings panel.

You can also select a terminal type by using the ISPTTDEF program, as described in *ISPF Dialog Developer's Guide and Reference*.

This panel can also include one or more of the following installation-dependent options for terminal type:

3277KN	3277 Katakana terminals
3278CF	3278 Canadian French terminals
3278KN	3278 Katakana terminals.

A 5550-3270 Kanji emulation Version 3 terminal has the same character set as a 3278 Katakana terminal, so you should specify 3278KN as the terminal type. Also, because the 5550 running with the Japanese 3270PC/G Version 3 or 3270 PC Version 5 has the same character set as a 3278 Katakana terminal, in either case you should specify 3278KN as the terminal type.

Print Graphics ParmS

The Print Graphics ParmS portion of the ISPF Settings panel allows you to specify the following to GDDM:

- Family printer type
- Device name
- Aspect ratio.

Each of these parameters is described below:

Family printer type

This parameter has a default value of 2, which cannot be changed.

Device name

VTAM* node name of the physical printer to which graphic display output is to be routed. This name is supplied by the installation's system programmer.

Aspect ratio

How the graphics aspect ratio (relationship to displayed screen image) is to appear on the printed output. Aspect ratio can be either of the following:

- 0** Preserves the aspect ratio of the graphic area as displayed (Figure 2). In other words, the ratio of the graphic area width to its height is the same on the printed document (Figure 3 on page 12) as in the displayed view. Zero is the default value. Figure 3 shows how the graphic in Figure 2 would appear if the PRINTG command were issued with an aspect ratio of 0.
- 1** Preserves the positional relationship between the graphic and the alphanumeric characters outside the graphics area. In other words, the printed graphic (Figure 4 on page 12) aligns horizontally with characters outside the graphics area the same as it (the printed graphic) aligns in the displayed image.

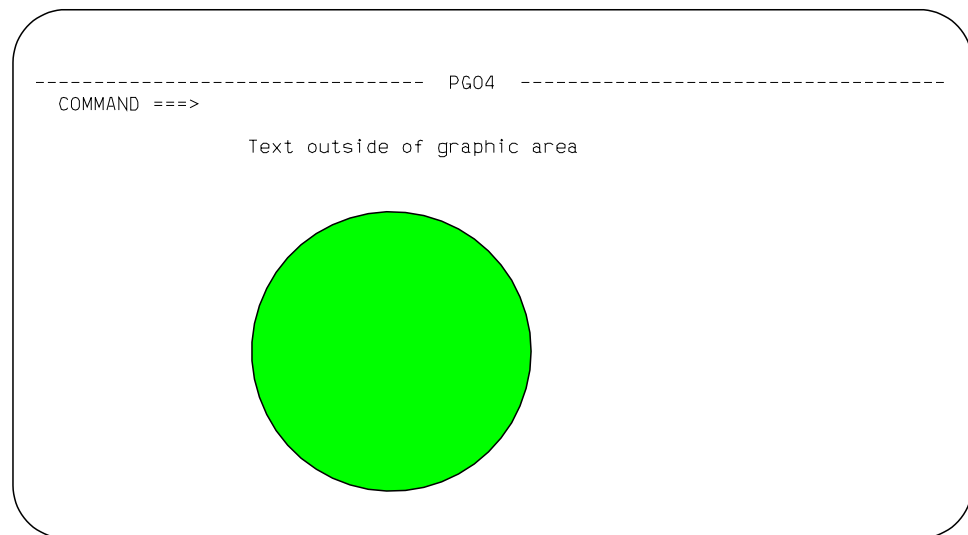


Figure 2. Screen Containing Graphics to Be Printed Using PRINTG

Settings (Option 0)

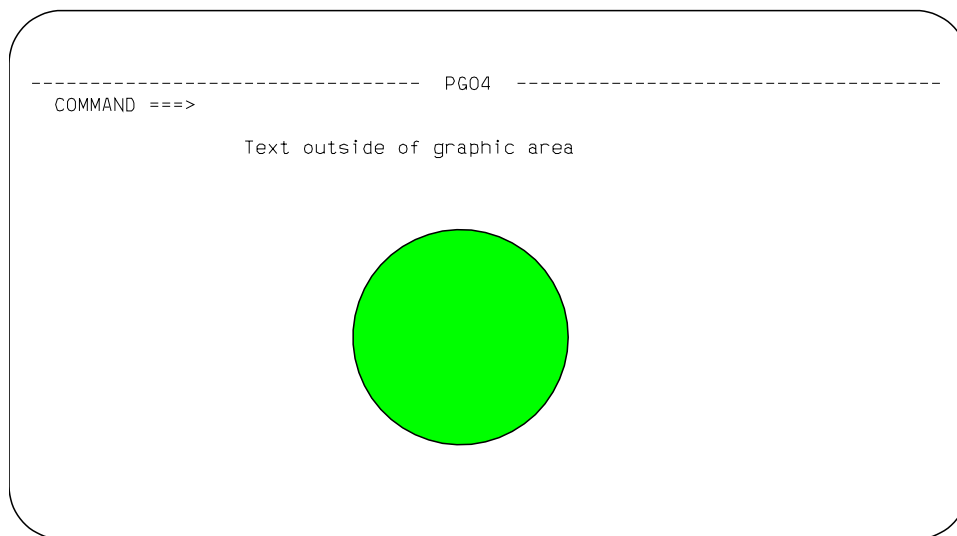


Figure 3. Example of Using Aspect Ratio Parameter 0

Figure 4 shows how the graphic in Figure 2 would appear if the PRINTG command were issued with an aspect ratio of 1.

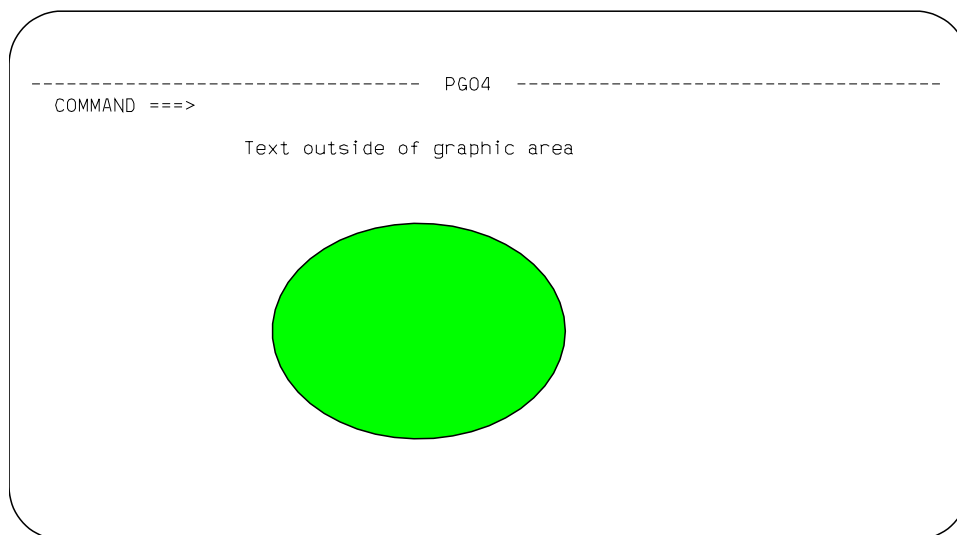


Figure 4. Example of Using Aspect Ratio Parameter 1

General

The General portion of the ISPF Settings panel allows you to specify values for the following:

- Input field pad
- Command delimiter.

Input field pad

Specifies a pad character that controls the initial padding of blank (unfilled) panel input fields, including the selection panels, but not the data portion, of an Edit display. Within Edit, you control null or blank padding with Edit commands.

The pad character specified can be a B (blank), N (nulls), or any special (non-alphanumeric) character.

Note: When you are running in GUI mode, blank pad characters will be displayed as nulls in order to avoid the need to delete blank characters when replace mode is not available.

Command delimiter

You can stack commands on the command line by separating them with a delimiter. The default delimiter, the semicolon, can be changed using this option. Alphanumeric characters, the period (.), and the equal sign (=) are not valid command delimiters. Stacking allows you to enter, for example:

```
====> FIND DEPT;HEX ON
```

which finds the characters DEPT and then displays the file at that point in hexadecimal mode.

The system variable for the delimiter is ZDEL. For more information about ZDEL, refer to the *ISPF Dialog Developer's Guide*.

ISPF Settings Panel Action Bar

The ISPF Settings panel action bar choices function as follows:

Log/List

The Log/List pull-down offers you the following choices (see “Specifying Log and List Defaults and Characteristics (The Log/List Action Bar Choice)” on page 15 for more information):

- 1 **Log Data set defaults.** Displays the Log Data Set Defaults panel.
- 2 **List Data set defaults.** Displays the List Data Set Defaults panel.
- 3 **List Data set characteristics.** Displays the List Data Set Characteristics panel.
- 4 **JCL...** Displays the Log and List JCL pop-up.

Function keys

The Function keys pull-down offers you the following choices (see “Working with Function Keys and Keylists (The Function Keys Action Bar Choice)” on page 21 for more information):

- 1 **Non-Keylist PF Key settings.** Displays the PF Key Definitions and Labels panel.
- 2 **Keylist settings...** Displays the Keylist Utility for ISP pop-up.
- 3 **Tailor function key display.** Displays the Tailor Function Key Definition Display panel.
- 4 **Show all function keys.** Changes the function key display. This will be an unavailable choice if you are currently showing all function keys.
- 5 **Show partial function keys.** Changes the function key display. This will be an unavailable choice if you are currently showing a partial list of function keys.
- 6 **Remove function key display.** Removes function keys from your screen. This will be an unavailable choice if you are currently not showing function keys.

Settings (Option 0)

- 7 **Use private and shared.** Equivalent to using the KEYLIST PRIVATE command.
- 8 **Use only shared.** Equivalent to using the KEYLIST SHARED command.
- 9 **Disable keylists.** Disables keylists. This choice is not available if you are currently running with keylists disabled.
- 10 **Enable keylists.** Enables keylists. This choice is not available if you are currently running with keylists enabled.

Colors The Colors pull-down offers you the following choices (see “Changing Default Colors (The Colors Action Bar Choice)” on page 35 for more information):

- 1 **Global colors...** Displays the Global Color Change Utility panel.
- 2 **CUA Attributes...** Displays the CUA Attribute Change Utility panel.
- 3 **Point-and-Shoot...** Displays the CUA Attribute Change Utility panel, positioned on the Point-and-Shoot panel element.

Environ

The Environ pull-down offers you the following choices (see “Specifying ISPF ENVIRON Settings (The Environ Action Bar Choice)” on page 42 for more information):

- 1 **Environ settings...** Displays the ISPF ENVIRON Command Settings panel.

Workstation

The Workstation pull-down offers you the following choices (see “Specifying Workstation Parameters (The Workstation Action Bar Choice)” on page 43 for more information):

- 1 **Workstation connection...** Displays the Initiate GUI Session panel.
- 2 **GUI panel settings...** Displays the GUI Settings panel.
- 3 **Workstation Tool Integration...** Displays the tool integration panel.
- 4 **Download ISPF C/S Component...** Displays the download panel.
- 5 **Disconnect from the Workstation...** Disconnects from the workstation.

Identifier

The Identifier pull-down offers you the following choices (see “Displaying Screen Name, Message Identifiers, and Panel Identifiers (The Identifier Action Bar Choice)” on page 52 for more information):

- 1 **Message identifier...** Displays the Message Identifier pop-up.
- 2 **Panel identifier...** Displays the Panel Identifier pop-up.
- 3 **Screen Name...** Displays the Screen Name pop-up.

Help The Help pull-down offers you the following choices:

- 1 Settings
- 2 Options
- 3 Terminal characteristics
- 4 Print Graphics parameters
- 5 General
- 6 Log/List action bar
- 7 Function keys action bar
- 8 Color action bar
- 9 Environ action bar

- 10 Workstation action bar
- 11 Identifier action bar

Specifying Log and List Defaults and Characteristics (The Log/List Action Bar Choice)

The Log/List pull-down on the ISPF Settings panel action bar (see Figure 5) allows you to specify the log and list data set defaults that are used when you terminate ISPF by issuing the RETURN or END command or by entering an X on the ISPF Primary Option Menu command line.

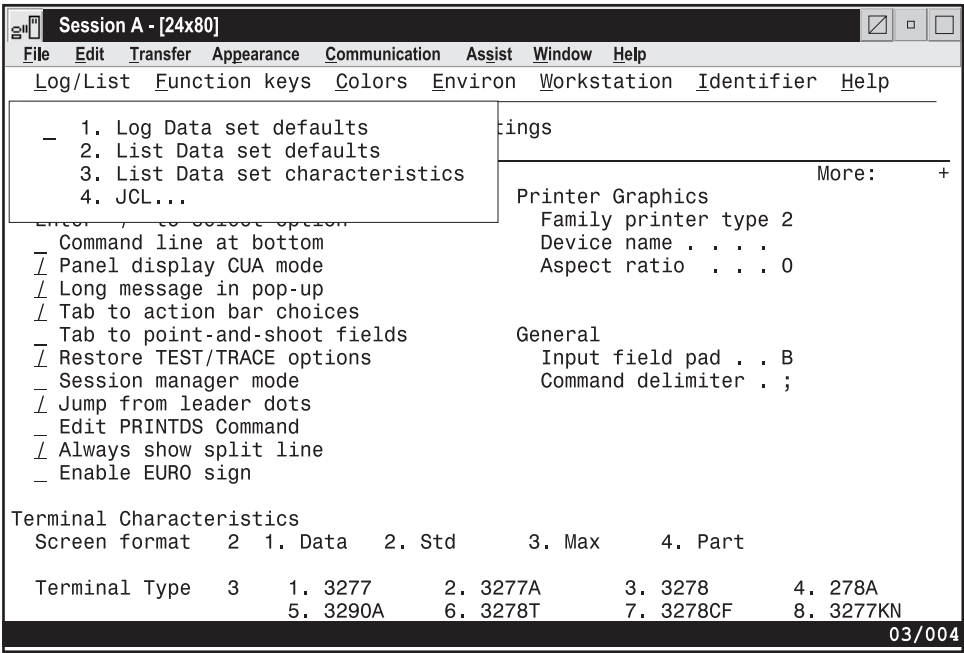


Figure 5. Log/List Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)

The defaults can also be used when you issue the LOG or LIST command. You may specify the characteristics of the records to be contained in the list data set when it is defined.

Log Data Set Defaults

When you select Log Data set defaults... from the Log/List pull-down on the ISPF Settings panel action bar, the panel shown in Figure 6 on page 16 is displayed.

Settings (Option 0)

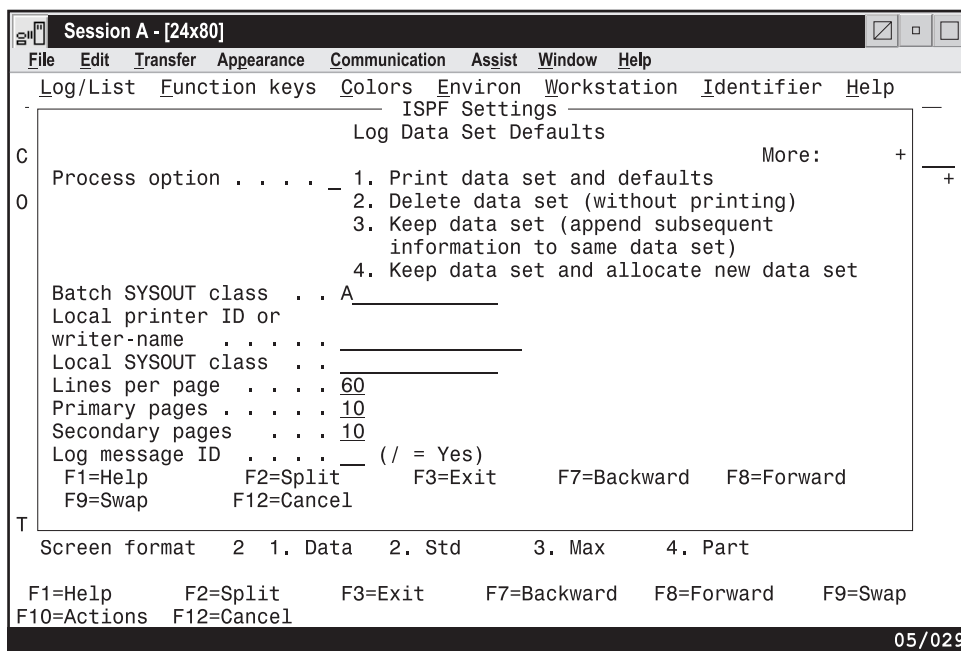


Figure 6. Log Data Set Defaults Panel (ISPISML1)

The initial defaults are listed in Table 3.

Table 3. Log Data Set Defaults

Parameter	Log Data Set
Local printer ID	none
Lines per page	60
Primary pages	10
Secondary pages	10

Local printer ID or writer name

Enter the name that your installation has assigned to an IBM 328x type of printer or the name of the external writer program. The default is blank. If you enter a name in this field, be sure to leave the Batch SYSOUT class field empty.

Lines per page

Normal values for lines per page are:

- 60 When printing 6 lines per inch
- 80 When printing 8 lines per inch.

Lines per page can range from 1–999. ISPF uses this value to determine when to cause a page eject if the eject control is not provided by the dialog; for example, when the dialog issues a LIST service request without the CC keyword specified.

Primary/Secondary pages

Primary/secondary allocation parameters are specified in terms of the anticipated number of pages of printout. These values are automatically converted by ISPF to the appropriate number of blocks prior to allocating space for the log data set.

Settings (Option 0)

If you modify the primary/secondary allocation parameters after the data set has been allocated, the new values take effect the next time you start ISPF. The log data set is allocated the first time you perform some action that results in a log message, such as saving edited data or submitting a batch job.

Note: Specify a primary allocation of zero to prevent allocation and generation of the log.

Log Message ID

If you select the Log Message ID option, the message ID is automatically added to the long message text written in the LOG data set.

If you request default processing options for the log data set, the following rules apply:

- If you specify Print data set and delete (1), you must also specify a Batch SYSOUT class and job statement information. If you specify Print data set and delete for both log and list, you can specify different Batch SYSOUT classes, but only one job is submitted for printing both data sets.
- If you specify routing to a local printer, you must specify a Local printer ID or writer name, and Batch SYSOUT must be blank. You can also enter a Local SYSOUT class if one is defined.

If you do not follow these rules or do not specify default processing options, primary option X or the RETURN command causes the final termination panel to be displayed.

List Data Set Defaults

When you select List Data set defaults... from the Log/List pull-down on the ISPF Settings panel action bar, the pop-up shown in Figure 7 is displayed.

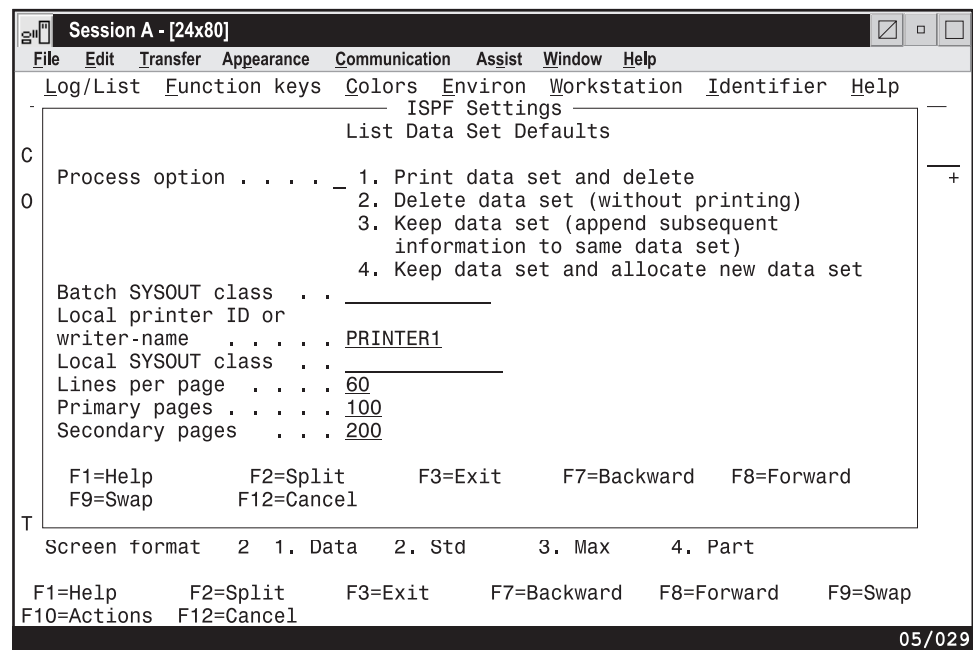


Figure 7. List Data Set Defaults Panel (ISPLML2)

Settings (Option 0)

The initial defaults are listed in Table 4.

Table 4. List Data Set Defaults

Parameter	List Data Set
Local printer ID	none
Lines per page . . .	60
Primary pages . . .	100
Secondary pages . .	200

Local printer ID

Enter the name that your installation has assigned to an IBM 328x type of printer or the name of the external writer program. The default is blank. If you enter a name in this field, be sure to leave the Batch SYSOUT class field empty.

Lines per page

Normal values for lines per page are:

- 60** When printing 6 lines per inch
- 80** When printing 8 lines per inch.

Lines per page can range from 1–999. ISPF uses this value to determine when to cause a page eject if the eject control is not provided by the dialog; for example, when the dialog issues a LIST service request without the CC keyword specified.

Primary/Secondary pages

Primary/secondary allocation parameters are specified in terms of the anticipated number of pages of printout. These values are automatically converted by ISPF to the appropriate number of blocks prior to allocating space for the list data set.

If you modify the primary/secondary allocation parameters after the data set has been allocated, the new values take effect the next time you enter ISPF. The list data set is allocated the first time you request a print function or a dialog issues a LIST service request.

If you request default processing options for the list data set, the following rules apply:

- If you specify Print data set and delete (1), you must also specify a Batch SYSOUT class and job statement information. If you specify Print data set and delete for both log and list, you can specify different Batch SYSOUT classes, but only one job is submitted for printing both data sets.
- If you specify routing to a local printer, you must specify a Local printer ID or writer name, and Batch SYSOUT must be blank.

If you do not follow these rules or do not specify default processing options, primary option X or the RETURN command causes the final termination panel to be displayed.

After reviewing or changing the parameters on this panel, enter the END command to return to the previous menu.

List Data Set Characteristics

When you select List Data set characteristics... from the Log/List pull-down on the ISPF Settings panel action bar, the panel shown in Figure 8 on page 19 is displayed to allow you to specify the characteristics of the records to be contained in the list

data set when it is defined. You can specify the record format, the logical record length, and the line length to be printed. When the characteristics are reset, their new values take effect at once unless the list data set has already been allocated. In that case, the new values are used for the next list data set allocation. These values are saved in your user profile, which ISPF automatically builds and maintains across sessions.

Specifications for logical record length and line length values can affect truncation of lines written to the list data set by a LIST service request. See the description of the LIST service in *ISPF Services Guide* for more information.

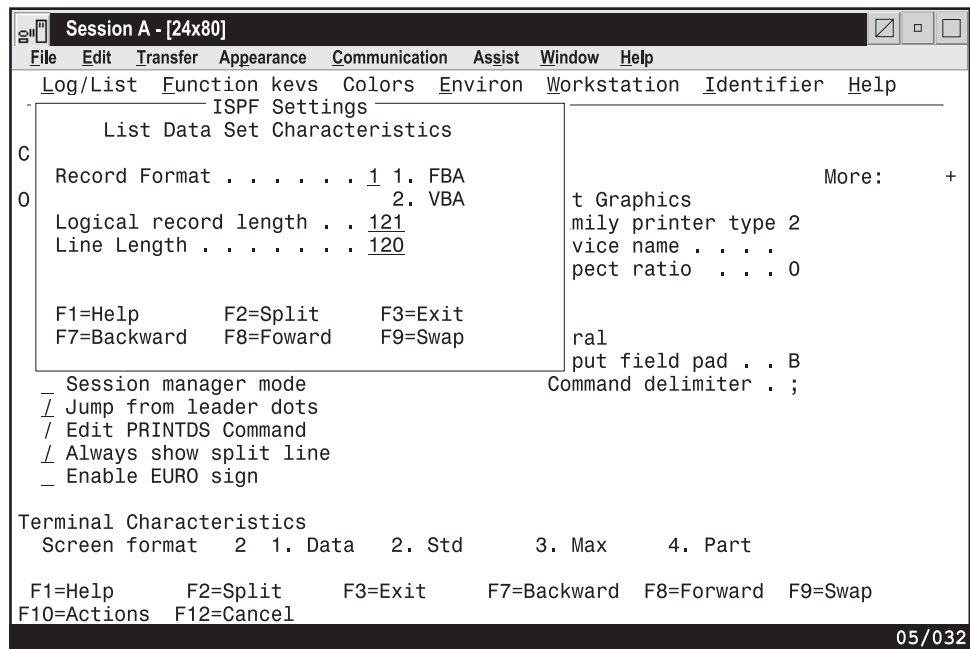


Figure 8. List Data Set Characteristics Panel (ISPISML3)

The fields on this panel are described below:

Record Format

The record format specifies the format and characteristics of the records in the list data set. The allowable record formats are:

- FBA** Fixed-length records that contain ANSI-defined printer control characters
- VBA** Variable-length records that contain ANSI-defined printer control characters.

The default setting is FBA.

Logical Record Length

The logical record length specifies the length, in bytes, of fixed-length records or the maximum length allowed for variable-length records. The default value is 121. This value represents one ANSI-defined control character and 120 bytes of data to be printed.

Line Length

The line length specifies the length of the logical line to be printed. If the specified line length is greater than the logical record length of the list data set, data is truncated. The range of allowable lengths is from 80 bytes to 160 bytes. The default value is 120.

Settings (Option 0)

The information supplied by the parameters allows for the printing of panels whose line lengths would not otherwise be supported by the available printing facilities.

For example:

- If a panel to be printed is 160 bytes wide but printing capabilities allow only 132 bytes, you should specify:

RECFM FBA or VBA
Line Length 130
LRECL 132 (allows for two ANSI-defined control characters).

The first page of output would contain the first 130 bytes of the panel. The second page would contain the last 30 bytes. This technique is referred to as the *cut and paste* method of printing.

- If a panel to be printed is 132 bytes wide and the printer supports this line length, you should specify:

RECFM FBA or VBA
Line Length 132
LRECL 133 (allows for one ANSI-defined control character).

The entire panel would be printed on one page of output.

- If a panel to be printed is 80 bytes wide, ISPF uses the default values for the LIST parameters. The entire panel would be printed on one page of output.

JCL

When you select JCL... from the Log/List pull-down on the ISPF Settings panel action bar, the pop-up shown in Figure 9 is displayed to allow you to specify up to four default job statements to be used for printing a log or list data set.

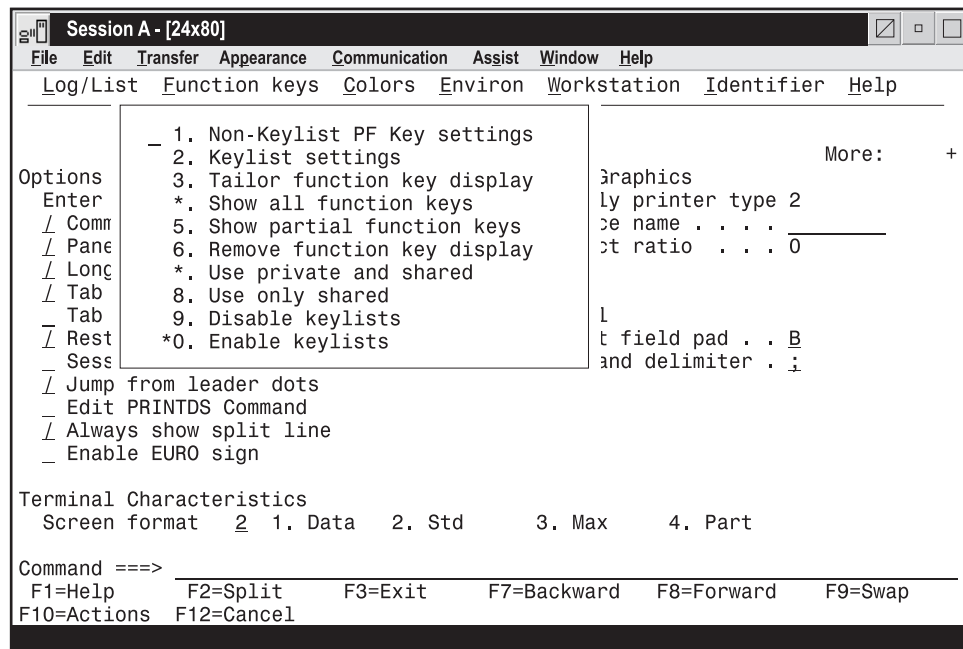


Figure 9. Log and List JCL Panel (ISPISMLJ)

Working with Function Keys and Keylists (The Function Keys Action Bar Choice)

The Function keys pull-down on the ISPF Settings panel action bar (see Figure 10 on page 22) allows you to define function keys and to create, edit, delete, and view keylists.

Nearly all panels in ISPF have associated keylists, although specific keylists typically serve numerous panels. There are several keylists used in the ISPF product panels. These keylists all start with the characters ISR. In addition, ISPF contains some keylists that start with the characters ISP. They are not used in any ISPF product panels, but can be used by an application if needed. Keylists are used when an application panel contains a)PANEL statement.

To accommodate both users who require CUA-compliant keylists and those who prefer to use the traditional ISPF function key assignments, F1–F12 are assigned CUA-compliant values, and F13–F24 are assigned traditional ISPF values. Therefore, the user who runs in default mode (ZPRIKEYS set to UPP; also see “Tailor Function Key Definition Display” on page 33) can retain the traditional key settings.

Note: Function keys in Edit are not CUA-compliant and are documented in *ISPF Edit and Edit Macros*

The KEYS and KEYLIST commands have been modified to benefit the user as well. When KEYS is issued from a panel that is not using a keylist, the PF Key Definitions and Labels panel is displayed, which allows you to change the ZPF variable settings, as in previous versions of ISPF. However, if the keys command is issued from a panel with an *active* keylist, the associated Keylist Utility panel Change panel is displayed.

The user can also control the use of keylists associated with panels using the KEYLIST command. By specifying KEYLIST OFF, the user causes ISPF to ignore the keylist in all logical screens running under the application ID from which the KEYLIST OFF command was issued, and use the ZPF variables for controlling function keys. The KEYLIST ON command (the default) causes ISPF to recognize the preeminence of keylists again. KEYLIST ON and OFF are equivalent to the Enable and Disable keylist choices on the Function keys pull-downs discussed in “Keylist Settings” on page 26.

ISPF Default Keylist

ISPKYLST is the ISPF default keylist. If you do not specify a keylist to be associated with a panel using the KEYLIST attribute on the PANEL tag (DTL) or using the)PANEL statement, ISPF uses the keys defined for ISPKYLST to display in the function area of the panel when it is displayed. The key settings and forms for ISPKYLST are as shown in Table 5.

Table 5. ISPKYLST Key Settings

Key	Command	Form
F1	HELP	Short
F2	SPLIT	Long
F3	EXIT	Short
F9	SWAP	Long
F12	CANCEL	Short
F13	HELP	Short
F14	SPLIT	Long

Settings (Option 0)

Table 5. ISPKYLST Key Settings (continued)

Key	Command	Form
F15	EXIT	Short
F21	SWAP	Long
F24	CANCEL	Short

ISPF Default Keylist for Help Panels

You can specify a keylist to be associated with a help panel by using the keylist attribute on the HELP tag (DTL) or by using a)PANEL statement in your panel definition. If you do not specify a keylist, ISPF uses the keys defined for ISPHELP to display in the function area of the help panel when it is displayed. The key settings and forms for ISPHELP are shown in Table 6.

Table 6. ISPHELP Key Settings

Key	Command	Form
F1	HELP	Short
F2	SPLIT	Long
F3	EXIT	Short
F5	EXHELP	Short
F6	KEYSHELP	Short
F7	UP	Long
F8	DOWN	Long
F9	SWAP	Long
F10	LEFT	Long
F11	RIGHT	Long
F12	CANCEL	Short

Figure 10 shows the Function keys pull-down on the ISPF Settings panel action bar. Each pull-down choice is described following the panel.

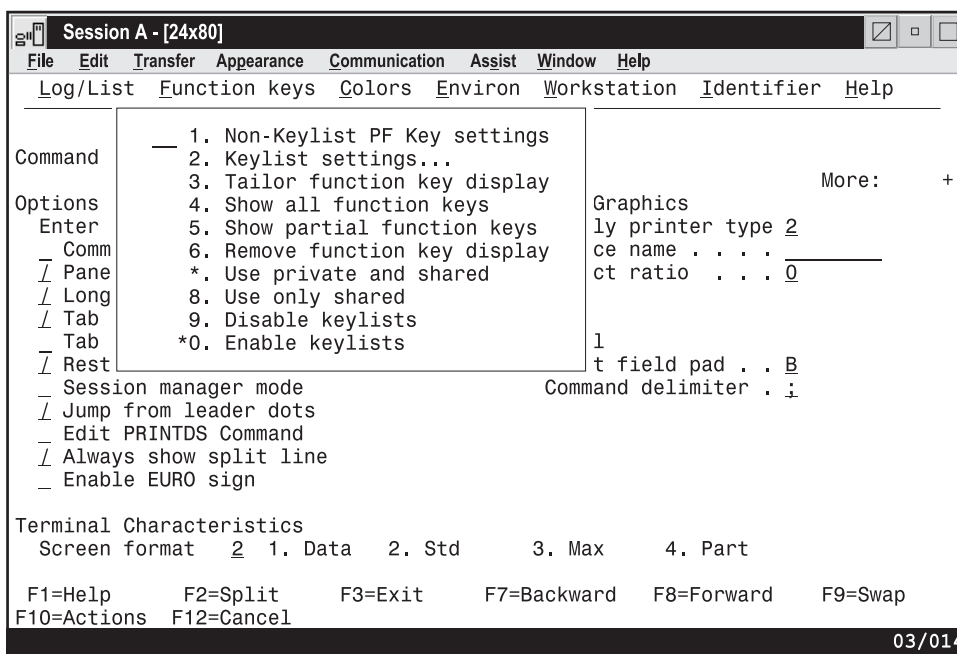


Figure 10. Function Keys Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)

Non-Keylist PF Key Settings

When you select Non-Keylist PF key settings from the Functions keys pull-down on the ISPF Settings panel action bar, the PF Key Definitions and Labels panel shown in Figure 11 is displayed. If you enter the KEYS command on the command line of any panel, the system displays one of two panels:

- If you are not using keylists (that is, keylists are disabled) or if there is no keylist associated with the panel from which you enter the KEYS command, the PF Key Definitions and Labels panel shown in Figure 11 is displayed.
- If you are using keylists (that is, keylists are enabled) and there is a keylist associated with the panel from which you enter the KEYS command, the Keylist Change panel shown in Figure 17 on page 29 is displayed.

If you define your application panels using panel definition statements, use the PF Key Definitions and Labels - Primary Keys panel shown in Figure 11 to assign function keys and associated labels to ISPF commands.

Note: See “Keylist Settings” on page 26 to find out how to assign function keys that are associated with a keylist.

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

PF Key Definitions and Labels

Command ==> _____

Number of PF Keys . . . 12 Terminal type . . 3278 More: +

Enter "/" to select . . _ (Enable EURO sign)

PF1 . . . HELP

PF2 . . . SPLIT

PF3 . . . END

PF4 . . . RETURN

PF5 . . . RFIND

PF6 . . . RCHANGE

PF7 . . . UP

PF8 . . . DOWN

PF9 . . . SWAP

PF10 . . . LEFT

PF11 . . . RIGHT

PF12 . . . RETRIEVE

PF1 label . . _____ PF2 label . . _____ PF3 label . . _____

PF4 label . . _____ PF5 label . . _____ PF6 label . . _____

PF7 label . . _____ PF8 label . . _____ PF9 label . . _____

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F12=Cancel

02/015

Figure 11. PF Key Definitions and Labels Panel (ISPOPT3D)

Note: The panel in Figure 11 is the panel that is displayed for terminals with 12 function keys. For terminals with 24 function keys, the first panel displayed shows the *primary* keys (F1–F12). When you press the Enter key, ISPF displays a panel showing the *alternate* keys (F13–F24). To alternate between the two panels, press the Enter key.

You can assign function keys to system commands, such as HELP or END, to commands that are meaningful within a particular function or environment, such as the Edit FIND and CHANGE commands, and to line commands, such as the Edit or dialog test I or D commands.

Settings (Option 0)

Before changing function key assignments, verify the terminal type and the number of function keys (12 or 24). The specified terminal type must be one of the following:

Table 7. Terminal Types

1.3277	2.3277A	3.3278	4.3278A
5.3290A	6.3278T	7.3278CF	8.3277KN
9.3278KN	10.3278AR	11.3278CY	12.3278HN
13.3278HO	14.3278IS	15.3278L2	16.BE163
17.BE190	18.3278TH		

Note: The 5550 is run with the Japanese 3270PC V5 or 3270PC/G V3 emulation program. The terminal type, set by the ISPF Settings panel, is set to 3278KN.

You can define or change a function key function simply by equating the key to a command. For example:

```
PF9 . . . CHANGE ALL ABC XYZ
PF12 . . . PRINT
```

In the example, F9 has been equated to an Edit command, and F12 has been equated to the system-defined PRINT command.

If you enter a blank for any function key definition, the key is restored to its ISPF default.

A function key definition beginning with a colon (:) is treated as a special case. The colon is stripped off, and the command to which the key is equated is inserted in the first input field on the line at which the cursor is currently positioned.

A function key definition beginning with a greater-than sign (>) is another special case. It causes the command to be passed to the dialog regardless of whether or not the command appears in the command tables. This feature provides compatibility with SPF, in which Edit and Browse commands were defined with a greater-than sign. When an ISPF function is executing, do not press the RESET key and then attempt to enter information or use a function key, because the results are unpredictable.

The label fields shown in Figure 11 on page 23 allow you to specify user-defined labels for the displayed representations of function key definitions. This provides for displaying meaningful words of eight characters or fewer, rather than the first eight, possibly meaningless, characters of a lengthy function key definition.

If a label is not assigned, the definitions displayed for that function key consist of the first eight characters of the function key definition.

If the label value is BLANK, the function key number and the equal sign display, but the value portion of that function key definition displays as actual blanks. This label might be used if, for example, a function key is not defined or if it is meaningless to the user, but the dialog developer wants each function key number to appear sequentially in the function key definition lines.

No function key information, not even the number, appears if the label value for that key is NOSHOW.

Settings (Option 0)

Figure 12 shows how the function key panel can be used to assign definitions and labels. In this example, F4 has been equated to a TSO data management command, while F12 has been equated to a command that requests job submission. Labels for several function keys are defined as well.

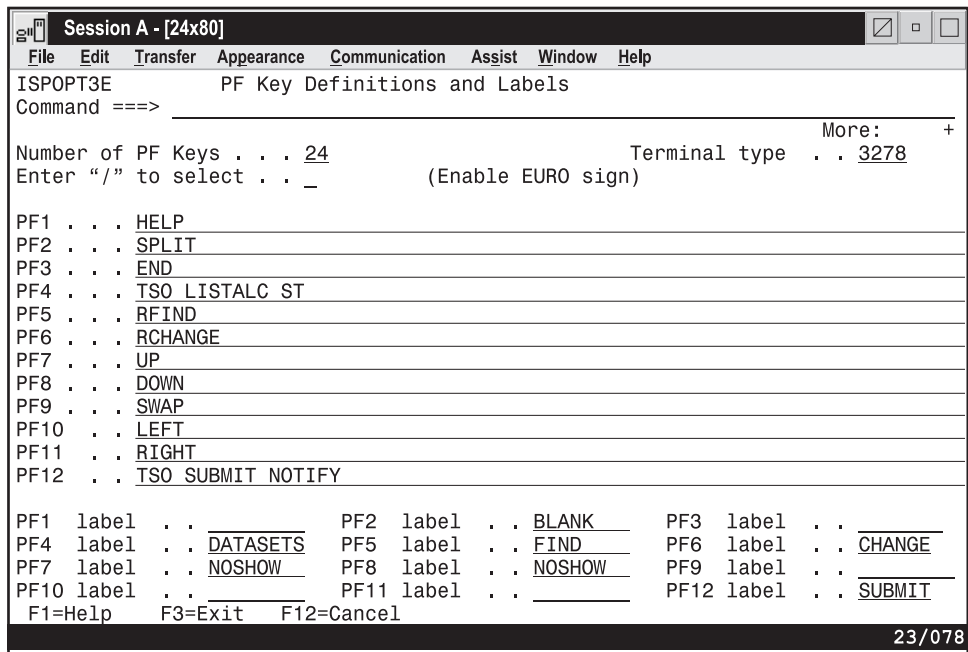


Figure 12. Using the PF Key Definitions and Labels Panel (ISPOPT3E)

Figure 13 shows the function key settings that are displayed on a panel when defined using the key definitions and labels in Figure 12.

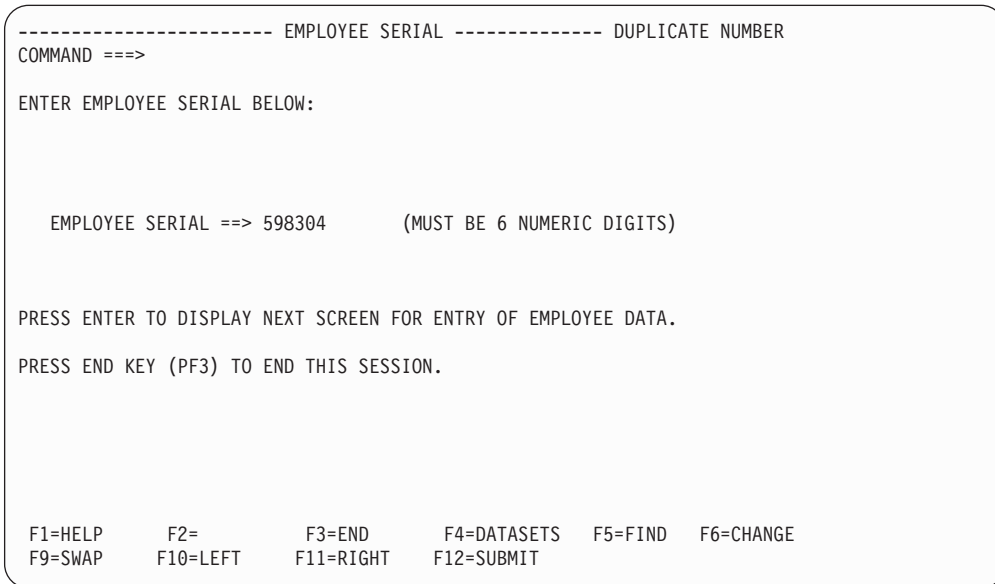


Figure 13. Example Screen with Function Key Definition Lines

Settings (Option 0)

Keylist Settings

To create or change a keylist associated with your panels, or to refer to or delete a keylist help panel from your keylist, select the **Keylist settings...** choice from the Function keys pull-down on the ISPF Settings panel action bar, or enter the KEYLIST command. The first panel displayed is similar to Figure 14. If you Enter the KEYS command from a panel that uses a keylist, the keylist change panel for the keylist active on the original panel is displayed.

The screenshot shows the 'Keylist Utility' panel for application 'ISR'. It displays a table of keylists with columns for 'Keylist' and 'Type'. The keylists listed are ISRHELP, ISRHLP2, ISRNAB, ISRNSAB, ISRREFL, ISRREF0, ISRSAB, ISRSNAB, ISRSPBC, ISRSPEC, and ISRSTRTP, all marked as 'Shared'. The currently active keylist is ISRSNAB. The panel also includes action keys (N=New, E=Edit, V=View, D=Delete, /=None) and a command menu at the bottom with function key assignments (F1=Help, F2=Split, F3=Exit, F7=Backward, F8=Forward, F9=Swap, F10=Actions, F12=Cancel).

Keylist	Type
ISRHELP	Shared
ISRHLP2	Shared
ISRNAB	Shared
ISRNSAB	Shared
ISRREFL	Shared
ISRREF0	Shared
ISRSAB	Shared
ISRSNAB	Shared
ISRSPBC	Shared
ISRSPEC	Shared
ISRSTRTP	Shared

Figure 14. Keylist Utility Panel (ISPKLUP)

In Figure 14, ISPHelp, ISPHLP2, ISPNAB, ISPSAB, ISPSNAB, ISPTST, ISRHELP, ISRNAB, and ISRNSAB have already been created for application ISR. ISPSAB, the currently active keylist, and ISPSNAB are keylists for the keylist utility panels. ISPKYLS is the ISPF default keylist for any DTL application panel or any panel defined with a)PANEL section that does not have a keylist defined. ISPHelp is the ISPF keylist for help panels created using DTL or using a)PANEL section.

The application ID is shown on the title line of the panel (ISR in Figure 14) and defaults to the application ID of the keys table in which the keylist was found when the KEYLIST command was entered. You can specify the keylist application ID on the)PANEL statement, or, if using DTL, it can be specified when you call the ISPF conversion utility using the KEYLAPPL option on the ISPDCTL command. If the panel does not specify an application ID, ISPF searches the currently executing application's keys table for a keylist that has the same name as the name specified on the PANEL tag. If the keylist is not found, and the current application ID is not ISP, ISPF searches the ISP application.

The column marked Type indicates whether a keylist is shared or is a private copy. For information about the KEYLIST SHARED and KEYLIST PRIVATE commands, see the **Keylistentry** in the **ISPF System Commands** table, found in the *Using Commands, Function Keys, and Light Pen or Cursor Selection* chapter of the *ISPF User's Guide Volume I*. Shared keylists are created by the ISPF DTL Conversion Utility. They cannot be deleted by the keylist utility. If a shared keylist is modified by the keylist utility, it is saved as a private keylist copy in xxxxPROF table, where

xxxx is the application ID. The keylist utility now shows the keylist as a private copy. If you have issued the KEYLIST SHARED command, you can still modify a keylist, but you cannot see the changes reflected in the function keys until the KEYLIST PRIVATE command is issued.

Note: The keylist utility is meant for users to modify function keys for their own use. To define function keys for all users of an application or for site-wide use, the definitions in the Dialog Tag Language should be modified and a new xxxxKEYS table should be generated.

The Keylist Utility panel action bar choices function as follows:

- File** Allows you to create, edit, view, or delete keylists, or exit the keylist utility. When you select File, the pull-down shown in Figure 15 is displayed.
- View** Enables you to display another set of keylists. When you select View, the pull-down shown in Figure 20 on page 32 is displayed.

File Pull-Down: To create, edit, view, or delete a keylist:

- Use a slash in the Select column to select a keylist from those displayed, then select the appropriate choice from the File pull-down.

OR

- Select a keylist from those displayed using one of the following actions: N(New), E(Edit), V(View), or D(Delete). If you use N(New), you are prompted for the name of the keylist you are about to create.

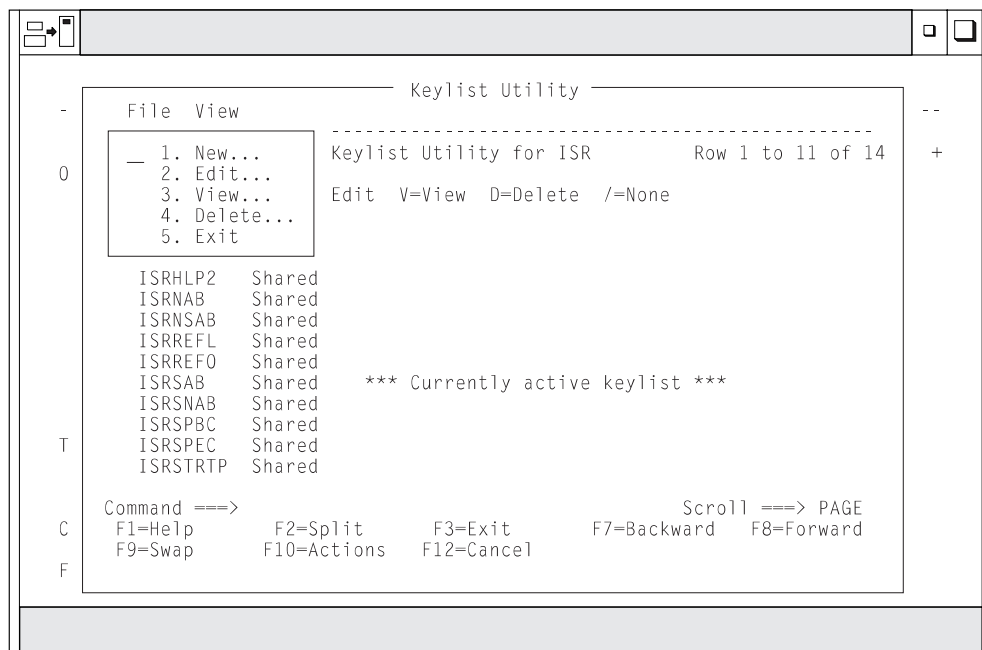


Figure 15. Keylist Utility with File Action Bar Pull-Down (ISPKLUP)

The choices on the File pull-down function as follows:

New To create a keylist, enter the keylist name when prompted. You are prompted after selecting New from the File pull-down, or after typing N next to any displayed keylist and pressing Enter. The screen shown in Figure 16 on page 28 is displayed.

Settings (Option 0)

Keylist Utility

File Defaults

ISR Keylist SAMPLE1 Create Row 1 to 9 of 24

Make changes and then select Options action.

Keylist Help Panel Name . . . _____

Key	Definition	Format	Label
F1 . . .	_____	_____	_____
F2 . . .	_____	_____	_____
F3 . . .	_____	_____	_____
F4 . . .	_____	_____	_____
F5 . . .	_____	_____	_____
F6 . . .	_____	_____	_____
F7 . . .	_____	_____	_____
F8 . . .	_____	_____	_____
F9 . . .	_____	_____	_____

Command ==> F1=Help F2=Split F3=Exit F7=Backward Scroll ==> PAGE
F9=Swap F10=Actions F12=Cancel F8=Forward

Figure 16. Keylist Create Panel (ISPKLUCR)

The Keylist Create panel action bar choices function as follows:

File The File pull-down offers the following choices:

- 1 **Cancel.** Cancels the creation of this keylist and returns to the Keylist Utility panel.
- 2 **Save and Exit.** Saves the keylist and returns to the Keylist Utility panel.

Defaults

The Defaults pull-down offers you the choice of the five default key settings described in Table 8.

Table 8. Default Key Settings

Condition	Key Setting
No defaults	No values are filled in.
Non-scrollable, no action bar	The following values are set: F1 HELP F2 SPLIT F3 EXIT F9 SWAP F12 CANCEL
Scrollable, no action bar	The following values are set: F1 HELP F2 SPLIT F3 EXIT F7 BACKWARD F8 FORWARD F9 SWAP F12 CANCEL

Table 8. Default Key Settings (continued)

Condition	Key Setting
Non-scrollable, with action bar	The following values are set: F1 HELP F2 SPLIT F3 EXIT F9 SWAP F10 ACTIONS F12 CANCEL
Scrollable, with action bar	The following values are set: F1 HELP F2 SPLIT F3 EXIT F7 BACKWARD F8 FORWARD F9 SWAP F10 ACTIONS F12 CANCEL

If you are creating a keylist on a terminal defined to have 24 keys, the 13–24 keys are set the same as the 1–12 keys. For example, F13 is automatically set the same as F1. HELP, EXIT, ACTIONS, and CANCEL all have display format SHORT. SPLIT, UP, DOWN, and SWAP have display format LONG.

Edit To edit the key definitions, display formats, and labels for a keylist, enter the keylist name when prompted. Select a keylist with a slash and select Edit from the File pull-down, or type E next to a keylist name and press Enter. The screen shown in Figure 17 is displayed, showing the existing values.

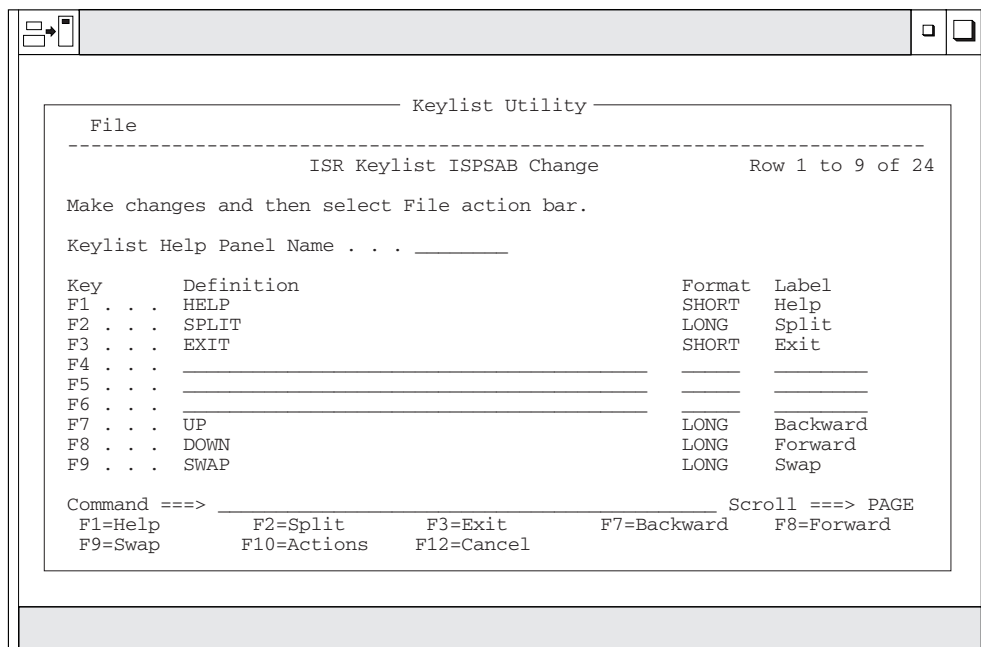


Figure 17. Keylist Change Panel (ISPKLUCH)

The Keylist Change panel action bar choice functions as follows:

Settings (Option 0)

File The File pull-down offers the following choices:

- 1 **Cancel.** Cancels the changes to this keylist and returns to the Keylist Utility panel.
- 2 **Save and Exit.** Saves the changes to this keylist and returns to the Keylist Utility panel or the panel from which you issued the KEYS command.

The following fields appear on the Keylist Utility Change panel:

Row x to x of xx

Indicates that you must scroll the panel to access the remaining label definitions.

Keylist Help Panel Name

To refer to a help panel from this keylist, enter the help panel name in this field in the following format:

- Must be 1-8 characters
- First, or only, character must be A–Z or a–z
- Remaining characters, if any, must be A–Z, a–z, 0–9

To remove a help panel name from a keylist, replace the help panel name with blanks.

Definition

If a display format or a label is specified, a definition must also be specified. Any definition is valid.

Format

The only valid display formats are:

LONG

The default. Indicates that the key label should be displayed in the function key area when the FKA command is toggled to the first cycle after OFF.

SHORT

Indicates that the key label should be displayed in the function key area when the FKA command is toggled to the first or second cycle after OFF. A key will display more often in the function key area if it is given the SHORT display format.

NO

Indicates that the key label should never be displayed in the function key area, regardless of the FKA command toggle cycle.

Label Any label is valid. If the **Label** field is left blank, it will default to the definition. This will happen only if the field is blank. If the **Label** field is not blank and the definition is changed, the **Label** field will not change automatically.

View To view a keylist, but not modify it, enter the keylist name when prompted. Select the keylist with a slash, then select View from the File pull-down, or type V next to the keylist name displayed and press Enter. The screen shown in Figure 18 on page 31 is displayed.

Keylist Utility

ISR Keylist ISPSAB Browse Row 1 to 11 of 24

The definition of the ISPSAB keylist is below.

Keylist Help Panel Name . . . : _____

Key	Definition	Format	Label
F1 . . .	HELP	SHORT	Help
F2 . . .	SPLIT	LONG	Split
F3 . . .	EXIT	SHORT	Exit
F4 . . .	_____	_____	_____
F5 . . .	_____	_____	_____
F6 . . .	_____	_____	_____
F7 . . .	UP	LONG	Backward
F8 . . .	DOWN	LONG	Forward
F9 . . .	SWAP	LONG	Swap
F10 . .	ACTIONS	SHORT	Actions
F11 . .	_____	_____	_____

Command ==> _____ Scroll ==> PAGE

F1=Help F2=Split F3=Exit F7=Backward F8=Forward

F9=Swap F12=Cancel

Figure 18. Keylist Utility View Panel (ISPCLUB)

If you select View, the help panel name, key definitions, display formats, and labels are displayed but cannot be changed.

Delete To delete a private copy of a keylist, enter the keylist name when prompted. Select the keylist with a slash, then select Delete from the File pull-down, or type D next to the keylist name displayed and press Enter. The Delete Keylist Confirmation pop-up shown in Figure 19 on page 32 is displayed.

Note: Shared keylists can only be deleted using the Dialog Tag Language.

Settings (Option 0)

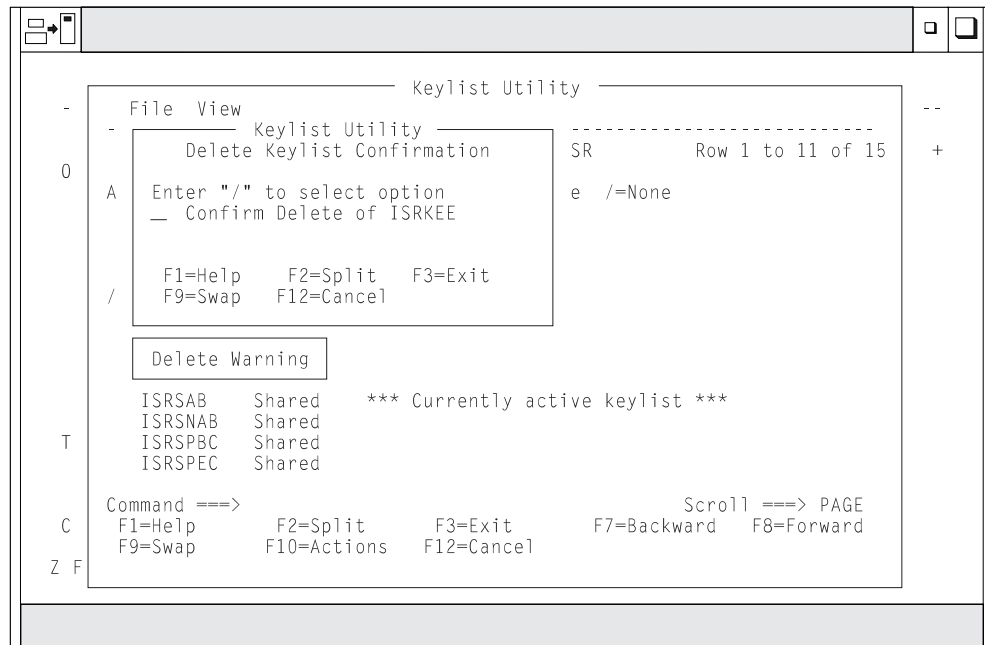


Figure 19. Keylist Utility with Delete Keylist Confirmation Pop-Up (ISPKLUP)

Use caution when deleting a keylist from an application that is currently running. If you delete a keylist that is required by a panel in the application, an error message appears and the panel does not display.

Exit Select Exit from the File pull-down to exit the keylist utility.

View Pull-Down: To display another set of keys on the Keylist Utility panel, select View on the action bar. An example of the View pull-down is shown in Figure 20.

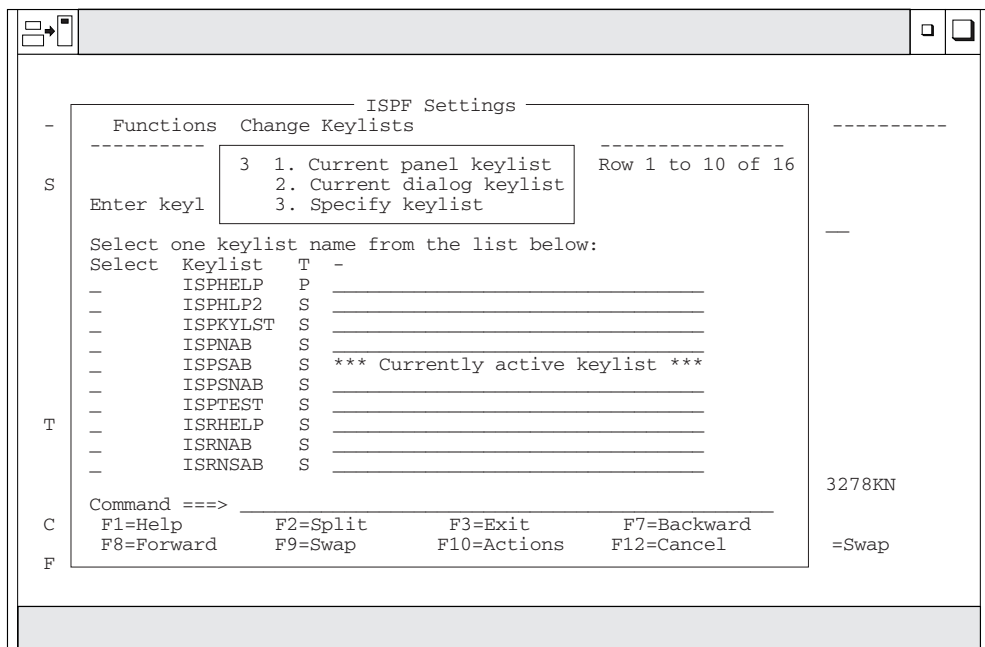


Figure 20. Keylist Utility with View Action Bar Pull-Down (ISPKLUP)

The View pull-down choices function as follows:

By current panel keylist

Displays the list of keys related to the current panel.

By current dialog keylist

Displays the list of keys related to the dialog currently running.

Specify keylist

Displays the list of keys for another application.

Tailor Function Key Definition Display

The Tailor Function Key Definition Display panel (shown in Figure 21) allows you to change the format of the function key definition lines that are displayed at the bottom of the screen. To display this panel, do one of the following:

- Select the Tailor function key display... choice from the Function keys pull-down.
- Issue the PFSHOW TAILOR command from any command line.

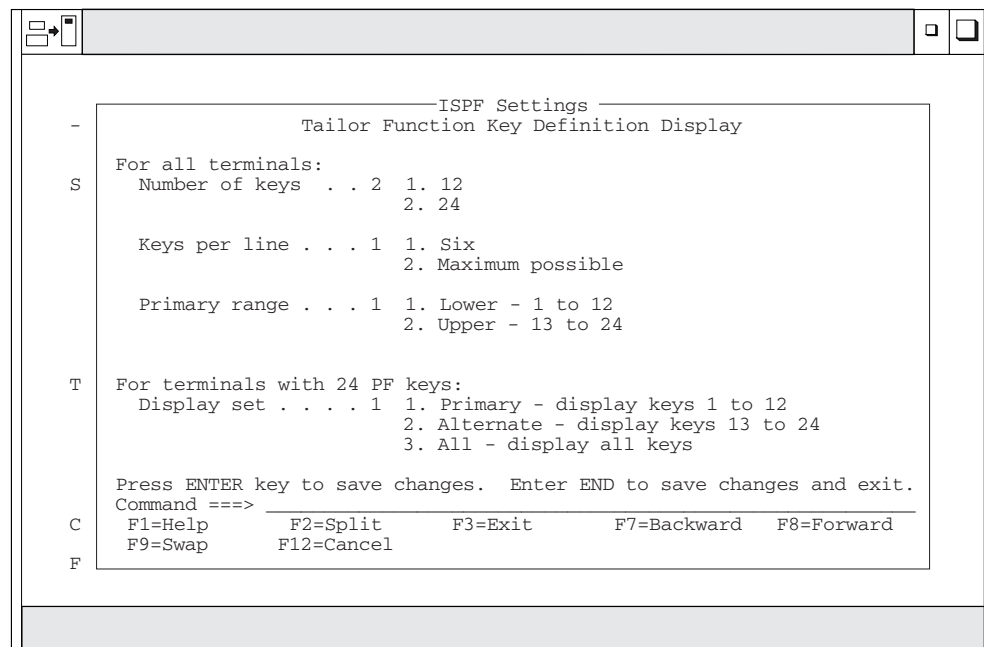


Figure 21. Tailor Function Key Definition Display Panel (ISPOPFA)

From the Tailor Function Key Definition Display panel you can set the following function key parameters:

Number of keys

The number of function keys you specify controls the particular set of function key definitions currently in use.

ISPF automatically determines the terminal type, screen size, and number of function keys:

- If the screen size is greater than 24 lines, but the terminal type specified implies a maximum of 24 screen lines, ISPF sets the terminal type to 3278.
- If you press a function key higher than 12, but the value specified for the number of function keys on your terminal is 12, ISPF sets the terminal type to 3278 and the number of function keys to 24.

Settings (Option 0)

ISPF cannot determine the terminal type or number of function keys in the following cases:

- If you switched between a 3277 and 3278 Model 2, both of which are 24-line terminals
- If you switched from a terminal with 24 function keys to a terminal with 12 function keys.

In these cases, you must inform ISPF of the terminal type and number of function keys you are using. Otherwise, ISPF uses an incorrect character set and invalid function key definitions.

ISPF automatically sets, or changes, the number of function keys in the following cases:

- If you specify 3277, ISPF initializes the number of keys to 12.
- If you specify 3278, ISPF initializes the number of keys to whatever was stored from the user's last ISPF session. If no number is stored from a prior session, the number of keys is initialized to 12.
- If you press a function key higher than 12, ISPF sets the number of keys to 24. ISPF cannot set the number of keys to 24 for the 3278T terminal.

Keys per line

You can specify the number of keys per line to be displayed on the function key definition lines. Six or Maximum possible can be specified, indicating either six keys or the maximum possible keys. Six ensures consistency across all panels. Maximum possible can save space on crowded panels. The Maximum possible option is forced when you select the Panel display CUA mode option on the ISPF Settings panel.

Primary range

You can specify that the primary key range be:

Lower Primary keys are F1–F12.

Upper Primary Keys are F13–F24.

The default value is lower.

Display set

For terminals with 24 function keys, you can choose to display only the primary set of function keys (F1–F12, the default range), the alternate set of function keys (F13–24), or all 24 keys. Your display choices depend on which range you specify for the Primary range option. For terminals with 12 function keys, this setting is ignored.

The Function Keys Pull-Down

The Function keys pull-down provides choices that enable you to display the function keys in various forms.

Choices For Changing PF Key Definitions

You can change the PF Keys that you have defined by using one of the first three choices on the Function Keys pull-down. Choosing **Non-keylist PF Key settings** calls the PF Key Definitions and Labels panel, where you can assign PF keys to ISPF commands, and label them. This choice is like using the KEYS command.

Choosing **Keylist settings...** from the pull-down is like using the KEYLIST command, and the **Tailor Function Key Display** choice calls up the Tailor Function Key Definition Display panel.

Choices For Showing PF Keys on the Display Screen

By selecting **Show all function keys**, **Show partial function keys**, or **Remove function key display**, you can specify that ISPF use the long form of function key display, the short form of function key display, or no function keys, respectively.

Each of these pull-down choices has an equivalent PFSHOW and FKA command associated with it. The commands operate as toggles; the pull-down choices become unavailable if they are the current setting.

Table 9 on page 35 explains the relationship between the pull-down choices and their related command combinations.

Table 9. Displaying Forms of the Function Keys

Pull-down Choice	Command Equivalent	Result
Show all function keys	PFSHOW PFSHOW ON FKA FKA ON	Long setting; all available function keys displayed. This is the default setting.
Show partial function keys	PFSHOW (2nd time issued) FKA (2nd time issued) FKA SHORT*	Short setting; a partial listing of the function keys displayed.
Remove function key display	PFSHOW (3rd time issued) PFSHOW OFF FKA (3rd time issued) FKA OFF	No function keys displayed. If PFSHOW or FKA is issued for a 4th time, the display returns to the long, or ON, setting.
Note: * The FKA SHORT command can be issued at any time to invoke the short setting.		

Choices for Determining Who Can Use Your PF Keylist

The Function keys pull-down has two choices that are equivalent to the KEYLIST PRIVATE and KEYLIST SHARED commands:

Use private and shared

Causes ISPF to use the keylist defined as private (equivalent to the KEYLIST PRIVATE command). Private is the default. It is unavailable if it is the current setting.

Use only shared

Causes ISPF to use the keylist defined as shared (equivalent to KEYLIST SHARED). It is unavailable if it is the current setting.

Choices for Enabling Keylists

The Function keys pull-down has two choices that are equivalent to the KEYLIST ON and KEYLIST OFF commands:

Enable keylists

Causes ISPF to use the keylist defined with the panel (equivalent to the KEYLIST ON command). Enable keylists is the default. It is unavailable if it is the current setting.

Disable keylists

Causes ISPF to ignore the keylist defined with the panel (equivalent to KEYLIST OFF). It is unavailable if it is the current setting.

Changing Default Colors (The Colors Action Bar Choice)

The Colors pull-down on the ISPF Settings action bar provides access to the Global Color Change Utility and the ISPF CUA Attribute Change Utility, respectively,

Settings (Option 0)

along with the Point-and-shoot Color Change panel. When in GUI mode, the choice starts the Global GUI Color Change Utility.

Both utilities operate much as they have in previous releases of ISPF; the point-and-shoot capability is new in Version 4. See the **Point-and-Shoot Text Fields** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for an introduction to the point-and-shoot feature.

Figure 22 shows the Colors pull-down on the ISPF Settings panel action bar. Each pull-down choice is described following the panel.

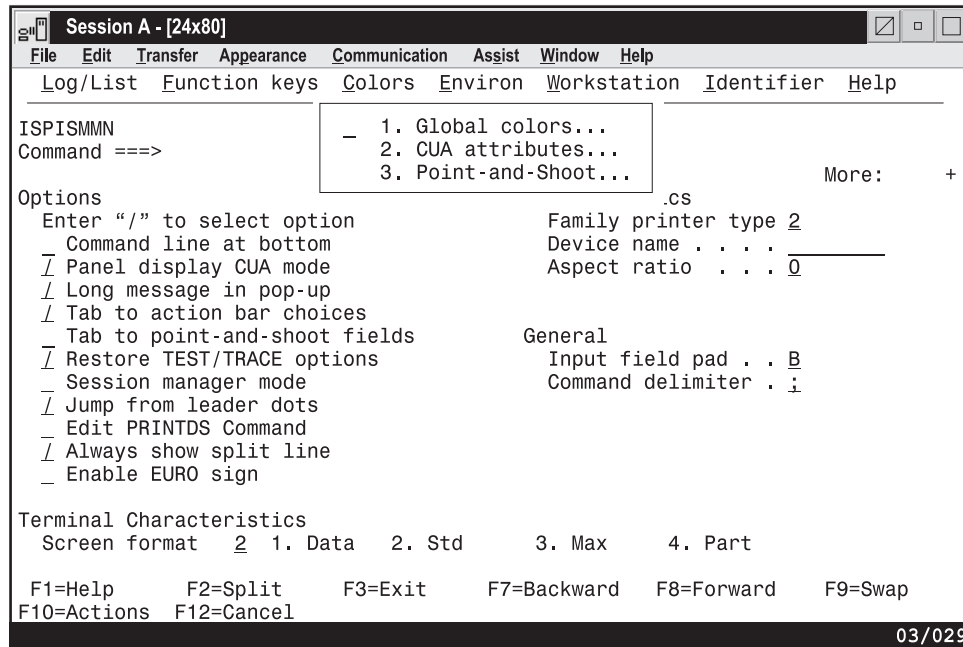


Figure 22. Colors Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)

Global Colors

For ISPF-supported seven-color terminals, ISPF provides the Global Color Change Utility (on the host) and the Global GUI Color Change Utility (on the workstation) to allow you to globally change the current colors ISPF uses for display.

To invoke the utility appropriate for your environment, do one of the following:

- Select the Global colors... choice from the Colors pull-down.
- Issue the ISPF system command COLOR from any ISPF command line.

ISPF displays the Global Color Change Utility panel shown in Figure 23 on page 37 if you are running in host mode; it displays the Global GUI Color Change Utility panel shown in Figure 24 on page 38 if you are running in GUI mode.

Global Color Change Utility: From the panel shown in Figure 23 on page 37, you can change the ISPF-defined default colors.

Log/List	Function keys	Colors	Environ	Workstation	Identifier	Help
ISPF Settings						
Global Color Change Utility						
S	Globally change one or more of the ISPF default colors and press ENTER to immediately see the effect. Clearing a color field and pressing ENTER restores the default color. Enter the EXIT command to save changes or enter the CANCEL command to exit without saving.					ms: type 2 . . _____ . . 0
T	ISPF Default Color BLUE _____ RED _____ PINK _____ GREEN _____ TURQUOISE _____ YELLOW _____ WHITE _____					r . . ; art 278CF 9. 3278KN 277KN
C	Command ==> Defaults F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap F12=Cancel					rward F9=Swap
F						

Figure 23. Global Color Change Utility Panel (ISPOPT10)

Enter a new value in the color field beside the ISPF-defined default color to be changed. The following are the valid color choices:

RED
 PINK
 GREEN
 YELLOW
 BLUE
 TURQ
 WHITE.

Note: You can restore the defaults by selecting the **Defaults** point-and-shoot field located at the end of the panel command line or by clearing a color field and pressing Enter.

Color changes are reflected on the panel display immediately after you press Enter. If you change red to blue by using the ISPF Global Color Change Utility, any panel element attributes defined as red change to blue on the next display. For example, if you enter:

RED blue_____

all panel element attributes with the color red change to blue on the next display. In the Global Color Change Utility table, if a field is blank and you press Enter, the ISPF-defined default color is restored.

The EXIT command ends the Global Color Change Utility function and saves global color changes in the ISPSPROF system profile table. The CANCEL command ends the Global Color Change Utility function and restores the global color definitions as they were before the utility was invoked.

Changes to the globally defined colors affect all logical screens whether they are displayed directly by ISPF or whether ISPF has requested that GDDM perform the

Settings (Option 0)

display. Line mode output, fields, and graphics that the dialog has placed on the screen using direct calls to GDDM are not affected by global color changes.

Field-level help is available for all input fields on the ISPF Global Color Change Utility panel.

Global GUI Color Change Utility: If you have set up the GUI interface, you can change its colors. From the Global GUI Color Change Utility panel shown in Figure 24, you can map each of the seven host colors to one of 16 workstation colors:

Host Colors	Workstation Colors
RED	BLACK
PINK	DARK BLUE
GREEN	DARK GREEN
YELLOW	DARK CYAN
BLUE	DARK RED
TURQ (turquoise)	DARK MAGENTA
WHITE	BROWN
	LIGHT GRAY
	DARK GRAY
	LIGHT BLUE
	LIGHT GREEN
	LIGHT CYAN
	LIGHT RED
	LIGHT MAGENTA
	YELLOW
	WHITE

Note: Avoid mapping to colors that are the same color as the panel background because the data will not be visible. For example, white text on a white background will not be visible.

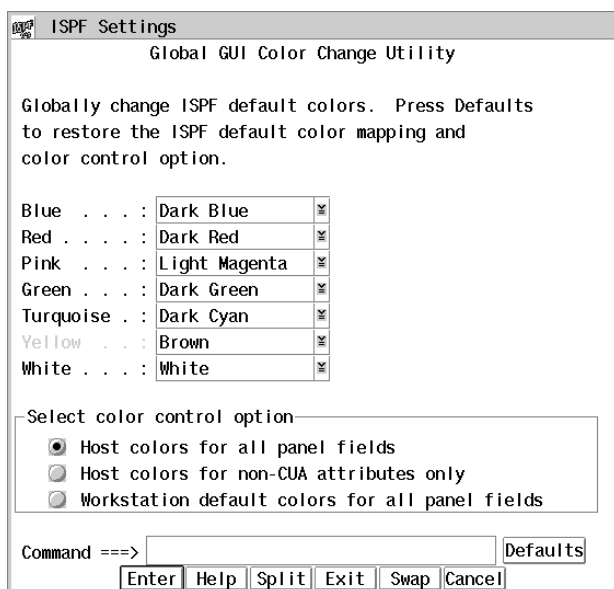


Figure 24. Global GUI Color Change Utility Panel (ISPOPTG1)

This panel provides three options for mapping host colors:

Settings (Option 0)

- 1 **Host colors for all panel fields.** Any colors that you remap affect all panel fields.
- 2 **Host colors for non-CUA attributes only.** Any colors that you remap affect only panel fields with non-CUA attributes.
- 3 **Workstation default colors for all panel fields.** Remapping colors will have no effect.

The display will reflect any color changes made immediately when you press Enter.

Note: If a field uses a non-CUA attribute without a color specified, ISPF does not specify a color for the field and the field defaults to the 3270 default color on the host. That same field defaults to the workstation default color when it is displayed on the workstation, even if **Host colors for all panel fields** is selected.

Remapping Host Colors: From the Global GUI Color Change Utility panel, select a drop-down list button corresponding to one of the seven host colors, and ISPF displays the drop-down list on the panel, as shown in Figure 25.

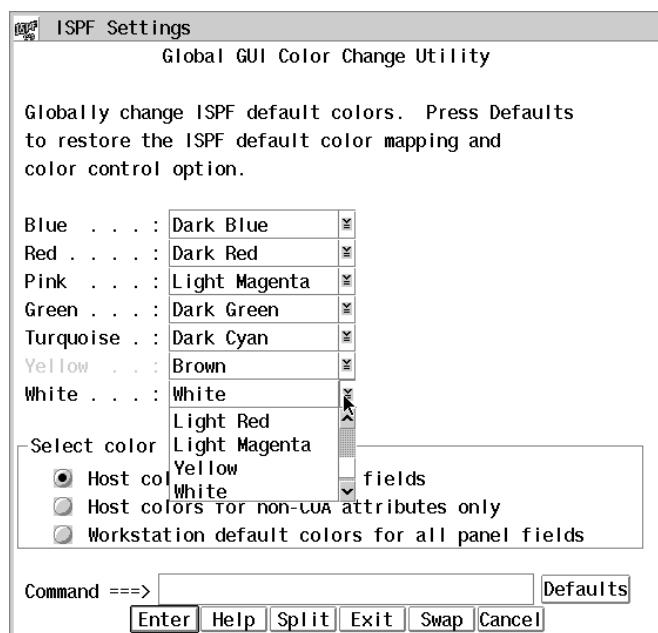


Figure 25. Color Change Panel With Drop-Down List

From the drop-down list, select one of the 16 workstation colors to map to the host color you selected. For example, if you select the workstation color light magenta to map to the host color red, any panel element attributes defined as red change to light magenta on the next display.

The EXIT command terminates the Global GUI Color Change Utility and saves any global color changes in the ISPSPROF system profile table. The CANCEL command terminates the Global GUI Color Change Utility and restores the global color definitions to the values that were in effect before the utility was invoked.

Settings (Option 0)

Changes to the globally defined colors affect all logical screens. Background panels and split screen panels are not immediately affected; the color change does not occur until the panels are redisplayed.

CUA Attributes

ISPF provides the CUA Attribute Change Utility to allow you to change the default values of panel colors, intensities, and highlights for panel element attributes. See the *ISPF Dialog Developer's Guide and Reference* for a description of TYPE values for CUA panel element attributes.

To invoke the ISPF CUA Attribute Change Utility, do one of the following:

- Select the CUA attributes... choice from the Colors pull-down.
- Issue the ISPF system command CUAATTR from any ISPF command line.

The CUA Attribute Change Utility panel shown in Figure 26 is displayed. This is a scrollable panel that contains the current values for CUA panel element attribute colors, intensities, and highlights.

Panel Element	Color	Intensity	Highlight
AB Selected Choice	YELLOW	LOW	NONE
AB Separator Line	BLUE	LOW	NONE
AB Unselected Choice	WHITE	HIGH	NONE
Action Message Text	RED	HIGH	NONE
Action Window Frame	BLUE	HIGH	
Caution Text	YELLOW	HIGH	NONE
Choice Entry Field	TURQ	LOW	USCORE
Column Headings.	BLUE	HIGH	NONE
Descriptive Text	GREEN	LOW	NONE

F1=Help F2=Split F3=Exit F7=Backward F8=Forward
F9=Swap F12=Cancel

03/017

Figure 26. CUA Attribute Change Utility Panel (ISPOPT11)

You can change the default values by typing over the existing values in the table with new values. Table 10 on page 41 shows valid change values:

Notes:

1. You can restore the defaults by selecting the **Defaults** point-and-shoot field located at the end of the panel command line or by clearing a color field and pressing Enter.
2. The Active Window Frame panel element, formerly on the Screen Display Characteristics panel, has been moved to this panel.

Table 10. Valid CUA Attribute Change Values

Color Choices	Intensity Choices	Highlight Choices
RED	HIGH	NONE
PINK	LOW	BLINK
GREEN		REVERSE
YELLOW		USCORE
BLUE		
TURQ		
WHITE		

In the CUA Attribute Change Utility table, if a field is left blank and Enter is pressed, the field defaults to the ISPF provided CUA-defined default value. Changes made to AB Selected Choice, AB Unselected Choice, Action Message Text, Function Keys, Informational Message Text, and Warning Message Text take effect immediately. Changes to other panel elements are reflected in the next panel display. The values of the panel colors, intensities, and highlights are saved across ISPF invocations in your ISPF system profile table, ISPSPROF. The changes to the panel element values affect all logical screens.

The CUA Attribute Change Utility affects only ISPF's CUA-defined attribute keywords. For example, the CUA Attribute Change Utility does not override the following panel element attribute:

```
% TYPE(OUTPUT) COLOR(RED)
```

Color changes made using the ISPF Global Color Change Utility override changes made using the ISPF CUA Attribute Change Utility. For example, you can use the Global Color Change Utility and change red to blue. You might then use the CUA Attribute Change Utility and change normal text to red. Normal text will display as blue.

Field-level help is available for all input fields on the CUA Attribute Change Utility Panel.

The ISPF-supported CUA-defined default values for the panel element attributes are listed in *ISPF Dialog Developer's Guide and Reference*

Point-and-Shoot

The Point-and-Shoot panel element on the CUA Attribute Change Utility panel (shown in Figure 27 on page 42) allows you to adjust the color, intensity and highlighting of point-and-shoot fields.

See the **Point-and-Shoot Text Fields** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for an introduction to the point-and-shoot feature.

To display this panel, positioned on the Point-and-Shoot panel element, do one of the following:

- Select the Point-and-Shoot... choice from the Colors pull-down.
- Issue the ISPF system command PSCOLOR from any ISPF command line.

Settings (Option 0)

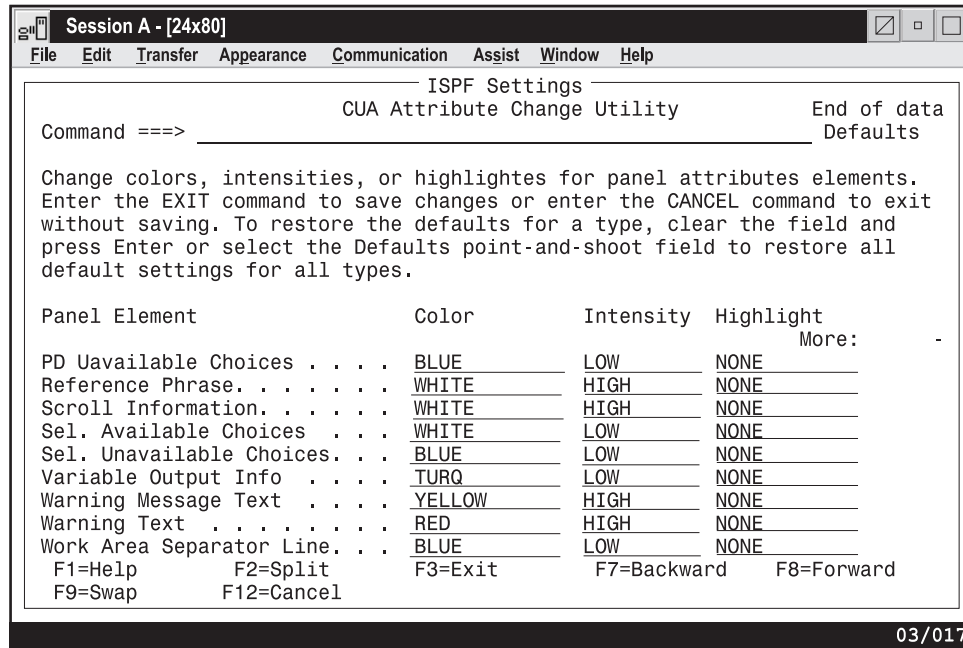


Figure 27. CUA Attribute Change Utility Panel Positioned on the Point-and-Shoot Panel Element (ISPOPT1X)

To change any of the three attributes, type over the existing values. The changes are reflected on the next panel displayed after you exit this panel. Table 11 shows valid change values:

Table 11. Valid Point-and-Shoot Change Values

Color Choices	Intensity Choices	Highlight Choices
RED	HIGH	NONE
PINK	LOW	BLINK
GREEN		REVERSE
YELLOW		USCORE
BLUE		
TURQ		
WHITE		

Specifying ISPF ENVIRON Settings (The Environ Action Bar Choice)

Figure 28 on page 43 shows the ISPF ENVIRON Command Settings panel from which you can choose parameter options for the ENVIRON command. To display this panel, do one of the following:

- Select the Environ choice on the ISPF Settings panel action bar.
- Issue the ISPF system command ENVIRON from any ISPF command line.

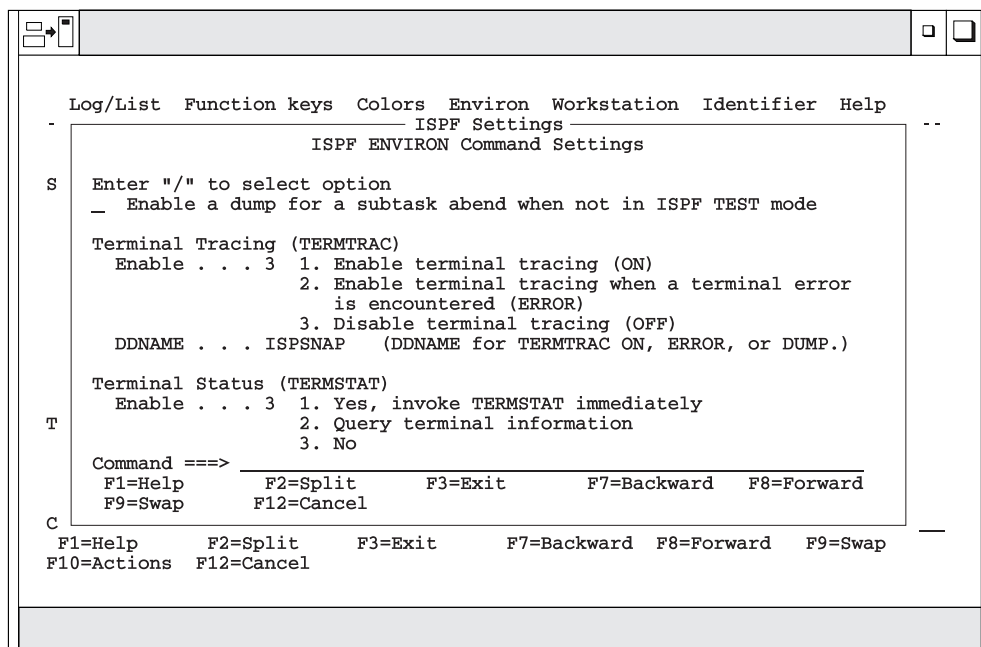


Figure 28. ISPF ENVIRON Settings Panel (ISPENVA)

The panel text provides an overview of the command and its parameters. For a complete description of the ENVIRON command and its parameters, see *ISPF Dialog Developer's Guide and Reference*

Specifying Workstation Parameters (The Workstation Action Bar Choice)

Figure 29 on page 44 shows the Workstation pull-down menu on the ISPF Settings panel action bar.

Settings (Option 0)

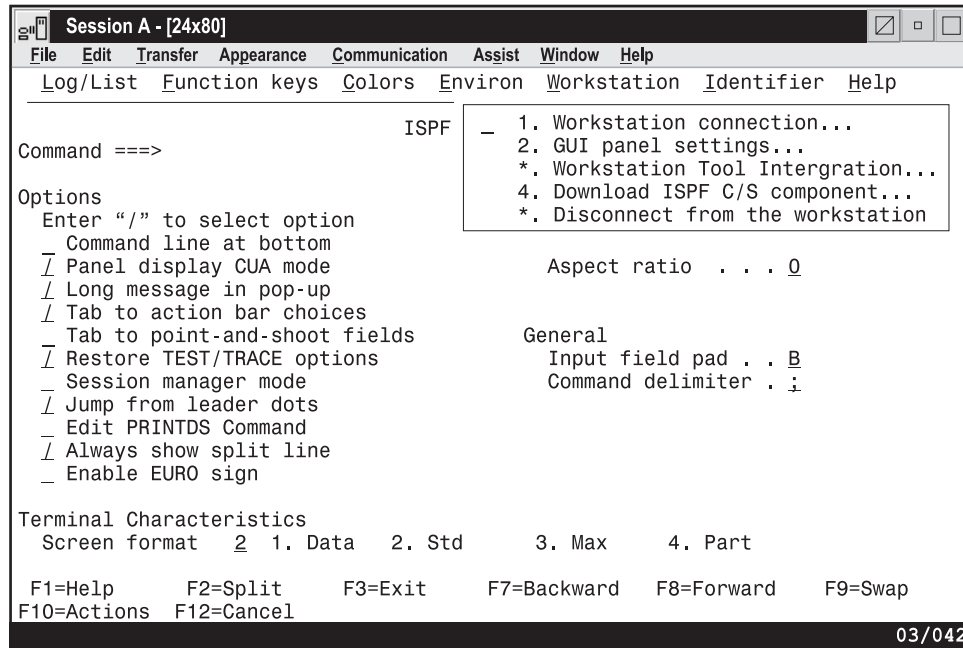


Figure 29. GUI Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)

From this pull-down you can start a GUI session, specify GUI panel settings, configure the Workstation Tool Integratin dialog, download the ISPF C/S component, and disconnect from the workstation.

Workstation Connection

When you select *Workstation connection* from the Workstation pull-down, one of two events can occur. Either the **Initiate Workstation Session** panel is displayed, or ISPF might tell you that a newer version of the Workstation Agent code is available (if your system programmer has not disabled this feature).

If your current Workstation Agent code does not match the latest level available, the **Client/Server Component Update** panel appears, as shown in Figure 30 on page 45.

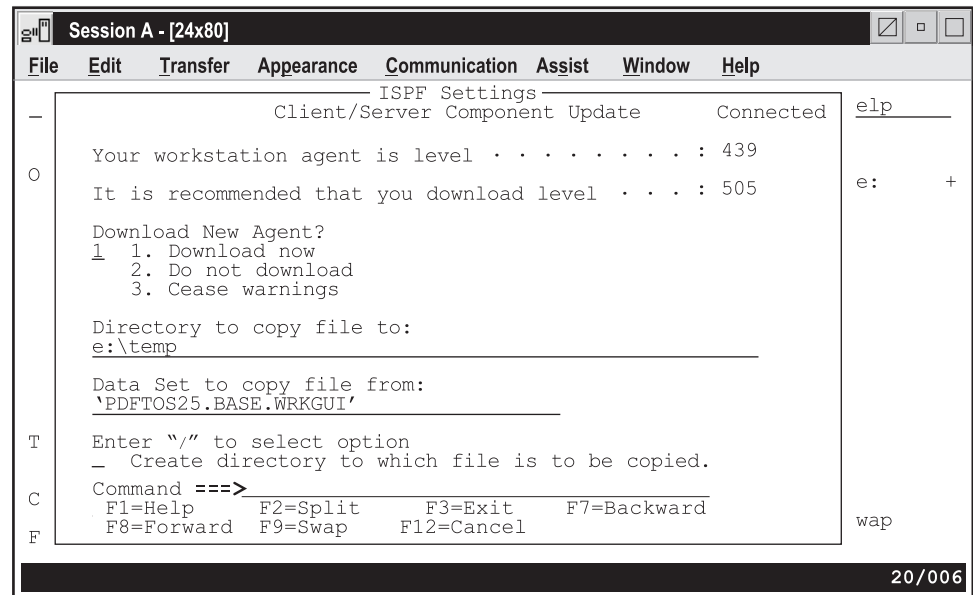


Figure 30. Client/Server Component Update Panel (ISPDTVD1)

From this panel, you can download the latest WSA or continue to use your current WSA, and even tell ISPF not to notify you again if your WSA does not match the latest available. Under the *Download New Agent?* field, you can specify one of three choices:

Download now

The download copies an installation program for the latest level of the WSA. You must specify the directory to copy the program into in the *Directory to copy file to:* entry field. If you want to create a new directory (one that does not already exist on your workstation) for the file, you can enter a slash mark (/) in the *Create directory to which the file is to be copied* field. The *Data Set to copy file from:* entry field should already be initialized by your system programmer. If it is not, you must specify the host data set that holds the latest WSA installation program. For example, 'SYS1.ISP.SISPGUI'.

After downloading the installation program for the WSA, you must end your ISPF/GUI connection, terminate your old Workstation Agent, and run the installation program to install the new one.

Do not download

You might want to download the new WSA later. If so, select *Do not download*. ISPF does not download the new installation program at this time, but will prompt you again the next time you start a GUI session. Of course, you can always download the agent yourself with the Client/Server Component download function of the ISPF Utilities panel at any time. See "Download Data Set to Workstation Utility (Option 3.7)" on page 164 for more information.

Cease warnings

ISPF does not download the agent installation program *and* you will not be notified again that your current WSA does not match the latest available on the host until an even higher level is available. That is, if you currently run level 433 and you have asked to Cease warnings at level 440, ISPF will not notify you again until at least level 441 is available.

Settings (Option 0)

Upon successful download of the new agent, the panel in Figure 31 appears. This panel gives you the option to end your GUI session and begin the installation immediately (by choosing option 1), or continuing your present session and installing the new Workstation Agent at a later time. See “Download Data Set to Workstation Utility (Option 3.7)” on page 164 for more information.

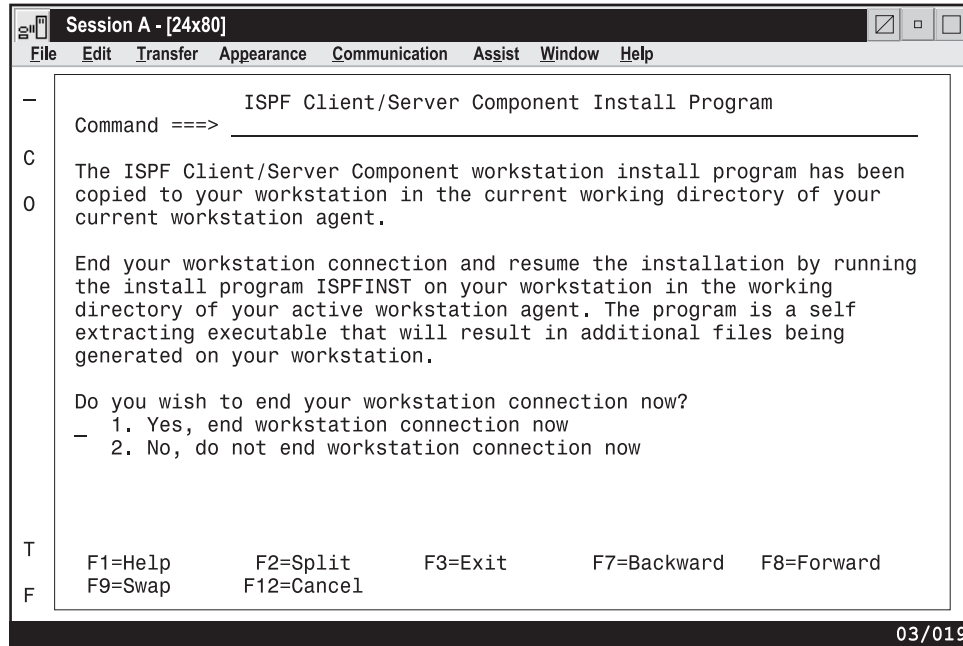


Figure 31. Client/Server Component Install Program Panel (ISPWSD0A)

If your Workstation Agent code matches the latest level available, the Initiate Workstation Connection panel appears, as shown in Figure 32 on page 47.

Notes:

- Before you can start a workstation session from this panel, you must have completed the following tasks:
 - Successful installation and initialization of TCP/IP or APPC.
 - Successful installation of the ISPF Workstation Agent component. See the appendix called **Installation Considerations for the Client/Server** in the *ISPF User's Guide Volume I*, and “Download Data Set to Workstation Utility (Option 3.7)” on page 164 for additional information.
 - Initialization of the ISPF WSA component.

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

ISPF Settings

Initiate Workstation Connection

Command ==> _____ More: +

/ Save values in system profile? (/=Yes)

Workstation Connection GUI Network Protocol

1 1. With GUI display 1 1. TCP/IP

2. Without GUI display 2. APPC

3. Use ISPDTPRF file

GUI Title

ISPF Client/Server

TCP/IP Address

1.23.456.789

APPC Address

Host Codepage . . . _____ Host Character Set . . . _____

F1=Help F2=Split F3=Exit F7=Backward F8=Forward

F9=Swap F12=Cancel

15/018

Figure 32. Initiate Workstation Connection Panel (ISPISMG1) part 1

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

ISPF Settings

Initiate Workstation Connection

Command ==> _____ More: -

GUI Title

ISPF Client/Server

TCP/IP Address

1.23.456.789

APPC Address

Host Codepage . . . _____ Host Character Set . . . _____

GUI Window Frame Default Window Background Color

1 1. Standard (STD) 1 1. Dialog (DLG)

2. Fixed (FIX) 2. Standard (STD)

3. Dialog (DLG)

Press ENTER to initiate a session. Press EXIT or CANCEL to return without initiating a session.

F1=Help F2=Split F3=Exit F7=Backward F8=Forward

F9=Swap F12=Cancel

03/019

Figure 33. Initiate Workstation Connection Panel (ISPISMG1) part 2

- When you complete the fields shown in Figure 32 and press Enter, the next screen displayed will be in GUI mode. Unless your system has been set up to bypass it (see "The System Register Panel" on page 176), the next panel is the WSA connection panel.

Settings (Option 0)

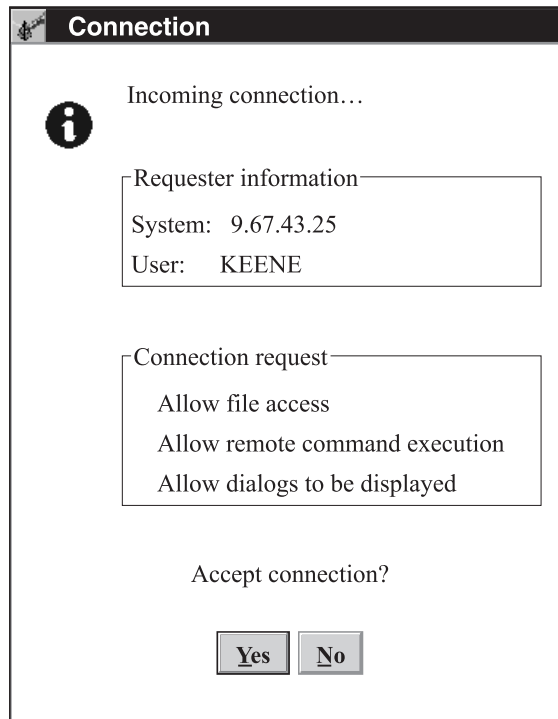


Figure 34. WSA Connection Panel

This panel indicates the requestor and the type of connection requested. Click on **Yes** to accept the connection as described, or **No** to reject the connection.

The Initiate Workstation Session panel allows you to specify that you want to start a GUI session. Starting a GUI session from this panel if you are in split screen mode or 3290 partition mode is not supported. If you select Workstation connection, you must specify the information in the following fields, as appropriate:

Save values in system profile?

The default for this setting is YES. Any changes to this field are saved in the user's system profile.

Workstation connection

Allows you to specify one of the following types of connections for your workstation session:

With GUI display

A GUI interface is provided for this session.

Without GUI display

A standard ISPF type of interface is provided for this session.

GUI Network Protocol

The type of network you use to connect the workstation to the host: TCP/IP or APPC.

You can also select the third option **Use ISPDTPRF file**, to specify that ISPF get your network address from the file allocated to DD ISPDTPRF. The file can be sequential or a member of a PDS, and it can be fixed blocked (FB) or variable blocked (VB). Each line of the file should be formatted as follows: `userid WORKSTAT protocol_id:network_address`, where:

userid

user's TSO userid

protocol_id

network protocol identifier, either *ip* for TCP/IP or *lu* for APPC.

network_address

workstation address

For example, KEENE WORKSTAT ip:9.45.202.69.

GUI Title

The title you want displayed in the window frame of your GUI session. This value will be used if dialog variable ZWINTTL or ZAPPTTL is not found.

TCP/IP Address

The workstation's IP address. Required if you specified TCP/IP in the **GUI Network Protocol** field. TCP/IP address prompt is point-and-shoot text. If selected, a pop-up window is displayed containing the last five addresses saved in the system profile.

A TCP/IP address can be in dotted decimal format or in domain name format. Dotted decimal format is a sequence of decimal numbers separated by periods, for example, **9.87.654.321**.

A TCP/IP address in domain name format consists of one or more domain qualifiers separated by periods. The minimum specification for addresses within the same domain is a TCP/IP host name, for example, **jsmith**. The fully-qualified domain name for *jsmith* is formed by appending the appropriate subdomain name and root domain name to *jsmith*, such as **jsmith.raleigh.ibm.com**. To use domain naming, a domain name server must be active and providing domain name resolution for domain names within your TCP/IP network. The domain name server address is determined by the value of the **NSINTERADDR** statement in the TCP/IP configuration data set. ISPF must be able to locate the TCP/IP configuration data set as described in the **TCP/IP Requirements Detail** section of the *Configuring Communications for the ISPF Client/Server* appendix of the *ISPF User's Guide Volume I*.

APPC Address

The workstation's APPC network name. Required if you specified APPC in the **GUI Network Protocol** field. APPC address prompt is point-and-shoot text. If selected, a pop-up window is displayed containing the last five addresses saved in the system profile.

An APPC address can be in fully-qualified LU name format or in symbolic destination name format. A fully-qualified LU name format consists of a network identifier and an LU name, separated by a period. For example, **USIBMNR.NRI98X00** is a fully-qualified LU name.

An APPC address in symbolic destination name format consists of a 1- to 8-character name such as **JSMITH**. The symbolic destination name must be defined as a *DESTNAME* and the corresponding fully-qualified LU name must be defined as the associated *PARTNER_LU* in the APPC/MVS side information.

Host Codepage

The host codepage value used in translating data from the host to the workstation. This value **must** be specified with a *Host Character Set* value if it is to be used. If only one, or neither, of these values is specified, the

Settings (Option 0)

values from the terminal query are used. If your terminal or emulator does not support codepages, the CODEPAGE and CHARSET parameter values on the ISPSTART command are used. If the ISPSTART values are not specified, the default codepage and character set is ENGLISH.

Host Character Set

The host character set value used in translating data from the host to the workstation. This value **must** be specified with a *Host Codepage* value if it is to be used. If only one, or neither, of these values is specified, the values from the terminal query are used. If your terminal or emulator does not support codepages, the CODEPAGE and CHARSET parameter values on the ISPSTART command are used. If the ISPSTART values are not specified, the default codepage and character set is ENGLISH.

GUI Window Frame

Allows you to specify one of the following types of window frames for your GUI session:

- 1 **Standard (STD).** A GUI window frame that can be resized and that has max/min buttons.
- 2 **Fixed (FIX).** A GUI window frame that has a min button but cannot be resized.
- 3 **Dialog (DLG).** A GUI window frame that cannot be resized and that does not have max/min buttons.

Note: Pop-up panels will always be displayed in dialog window frames.

Default window background color

Select the background color:

Dialog (DLG)

Standard (STD)

GUI Panel Settings

When you select *GUI panel settings...* from the Workstation pull-down, the GUI Settings pop-up window is displayed, as shown in Figure 35 on page 51.

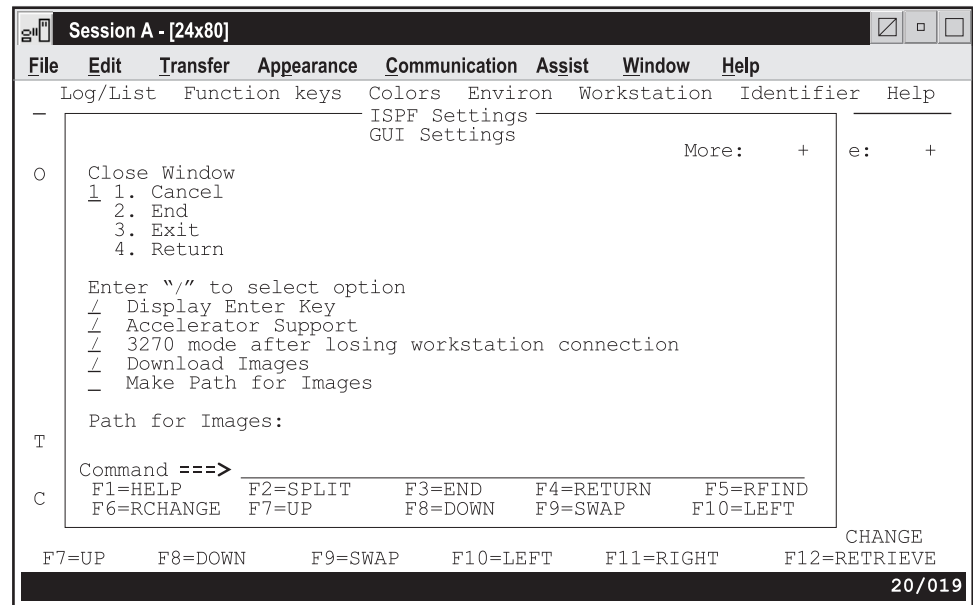


Figure 35. GUI Settings Pop-Up (ISPISMGs)

The GUI Settings pop-up window allows you to specify the following GUI parameters:

Close Window

Allows you to specify that one of the following commands be processed when you close a GUI window:

- CANCEL
- END
- EXIT
- RETURN.

Display Enter Key

Select this field to display an Enter push button at the bottom of all GUI panels.

Accelerator Support

Select this field to use accelerator keys in this session.

3270 mode after losing workstation connection

Select this field if you want the ISPF session to continue in the 3270 emulator session rather than abend with code 989 when the workstation connection is lost while running in GUI mode.

Download Images

Select this field to download images *from* the host library defined to ddname ISPILIB, *to* the workstation image path. If you are not running ISPF in GUI mode, this setting is ignored.

Make Path for Images

Select this field to have ISPF create the image path you specify, when the image path you specify does not already exist on the workstation.

Path for images

In GUI mode, this field enables you to specify a workstation path for images. The image path can be 244 characters long with no imbedded blanks. The image path you specify must follow the accepted path notation

Settings (Option 0)

for whichever operating system you are using. If you do not specify an image path, ISPF puts the image requested into the workstation's working directory.

Workstation Tool Integration

When you select *Workstation Tool Integration* from the Workstation pull-down, the Workstation Tool Integration Configuration dialog starts. See **The ISPF Workstation Tool Integration Program** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for more information.

Download ISPF C/S Component

When you select *Download ISPF C/S Component...* from the Workstation pull-down, the Client/Server component dialog starts. See "Download Data Set to Workstation Utility (Option 3.7)" on page 164 for more information.

Disconnect from the Workstation

When you select *Disconnect from the workstation* from the Workstation pull-down, the Workstation Disconnect Confirmation dialog starts. From the dialog you have the choice of **YES** to disconnect, or **NO** which cancels the disconnect request.

Displaying Screen Name, Message Identifiers, and Panel Identifiers (The Identifier Action Bar Choice)

Screen Name

You can specify that you want to display the screen name in one of two ways:

- Select the Screen name choice from the Identifier pull-down on the ISPF Settings panel action bar.
- Issue the ISPF system command SCRNAME ON.

Note: If you have selected to display the panel ID, the screen name does not display.

If you select the default setting for screen name, this value controls the default setting for the screen name. When ISPF initializes a screen, the setting of the screen name is initialized to this value.

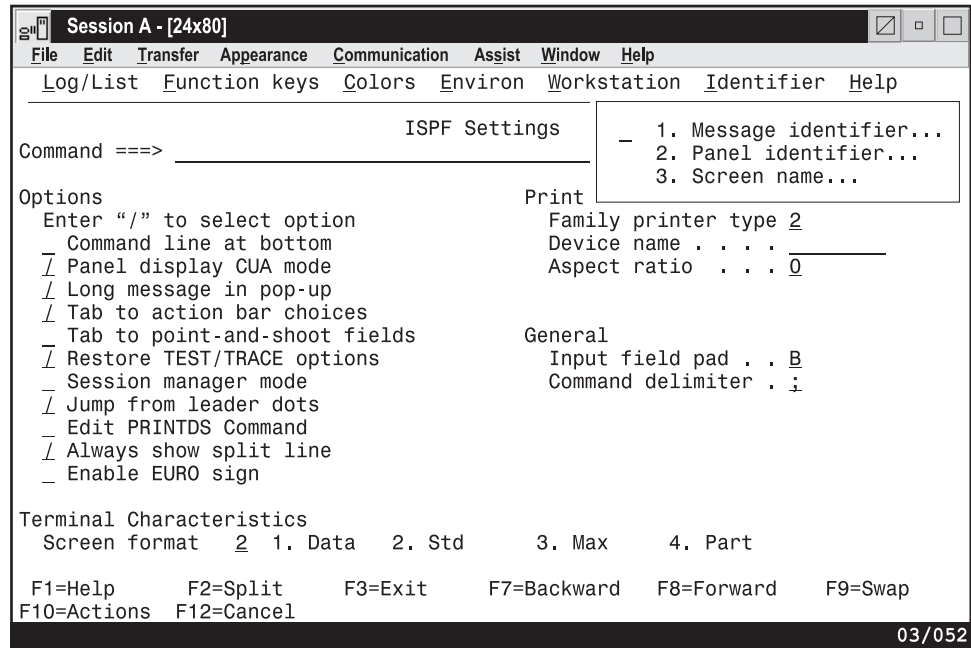


Figure 36. Identifier Pull-Down on the ISPF Settings Panel Action Bar (ISPISMMN)

Message Identifier

You can specify that you want to display message identifiers in one of two ways:

- Select the Message identifier choice from the Identifier pull-down on the ISPF Settings panel action bar, as shown in Figure 36.
- Issue the ISPF system command MSGID ON.

When you select Message identifier... from the Identifier pull-down, the Message Identifier panel is displayed, as shown in Figure 37 on page 54.

Settings (Option 0)

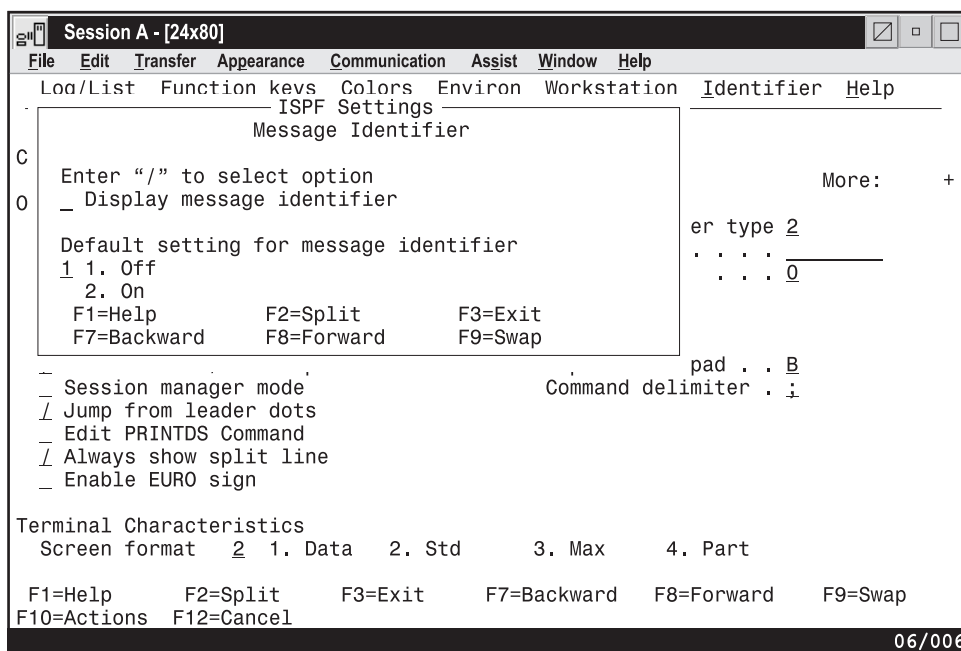


Figure 37. Message Identifier Panel (ISPI SMMI)

If you select the Display message identifier option, the message identifier is set to On. Deselect this choice (or issue the MSGID OFF command) to set the message identifier to Off.

Note: This setting is temporary and will not be retained across ISPF sessions.

If you select the default setting for message identifier, this value controls the default setting for the message identifier. When ISPF initializes a screen, the setting of the message identifier is initialized to this value.

Figure 38 on page 55 shows an error message on the ISPF Settings panel displayed with the message identifier set to on.

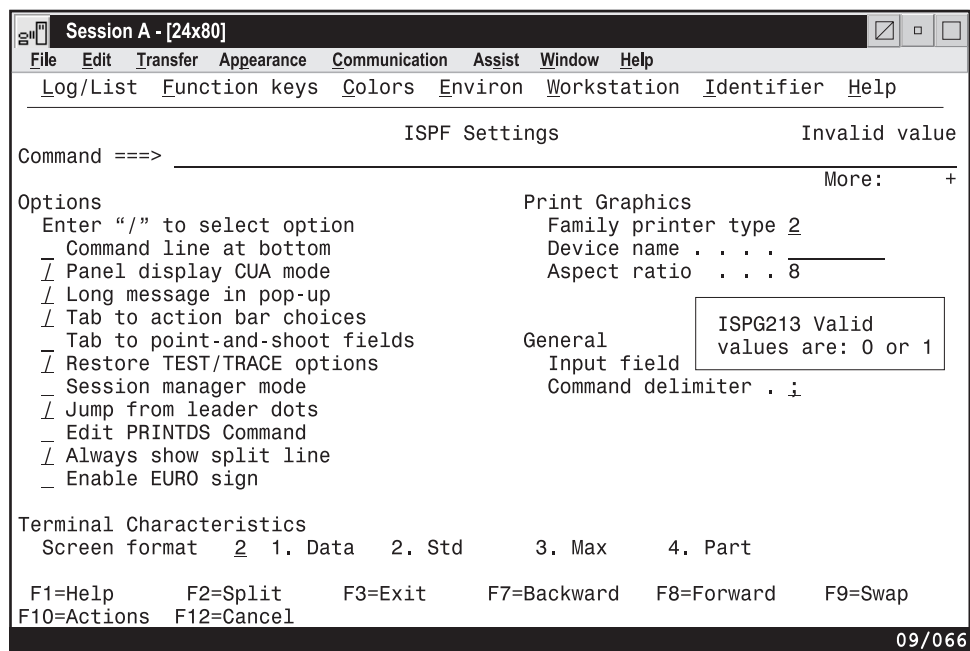


Figure 38. Panel Displayed with the Message Identifier Set to On

Panel Identifier

You can specify that you want to display panel identifiers in one of two ways:

- Select the Panel identifier choice from the Identifier pull-down on the ISPF Settings panel action bar, as shown in Figure 36 on page 53.
- Issue the ISPF system command PANELID ON.

When you select Panel identifier... from the Identifier pull-down, the Panel Identifier panel is displayed, as shown in Figure 39 on page 56.

Settings (Option 0)

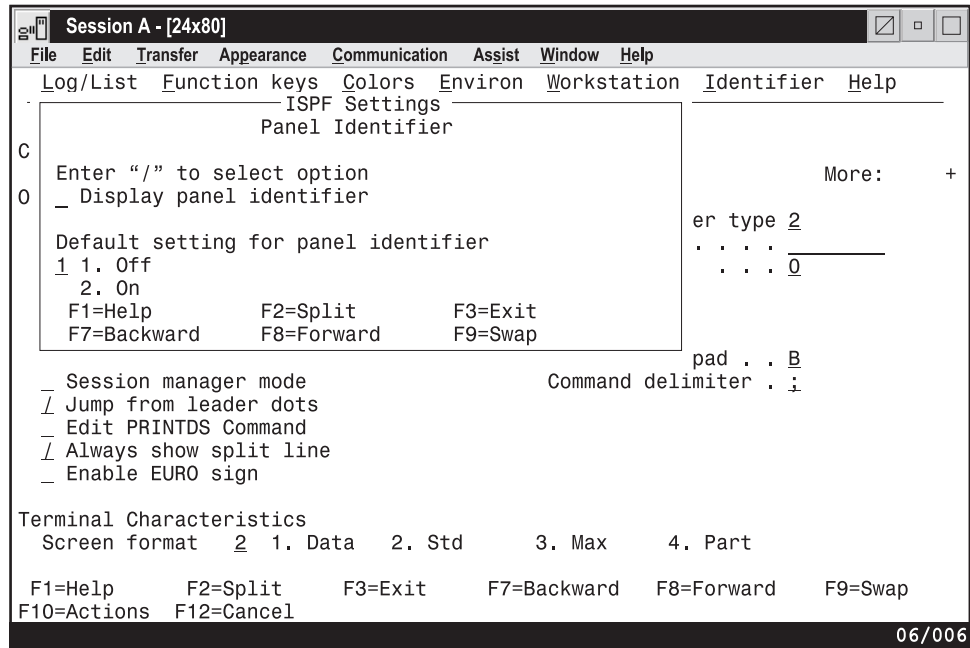


Figure 39. Panel Identifier Panel (ISPISMPI)

If you select the Display panel identifier option, the panel identifier is set to On. Deselect this choice (or issue the PANELID OFF command) to set the panel identifier to Off.

Note: This setting is temporary and will not be retained across ISPF sessions.

If you select the default setting for panel identifier, this value controls the default setting for the panel identifier. When ISPF initializes a screen, the setting of the panel identifier is initialized to this value.

Figure 40 shows the ISPF Settings panel displayed with the panel identifier set to On.

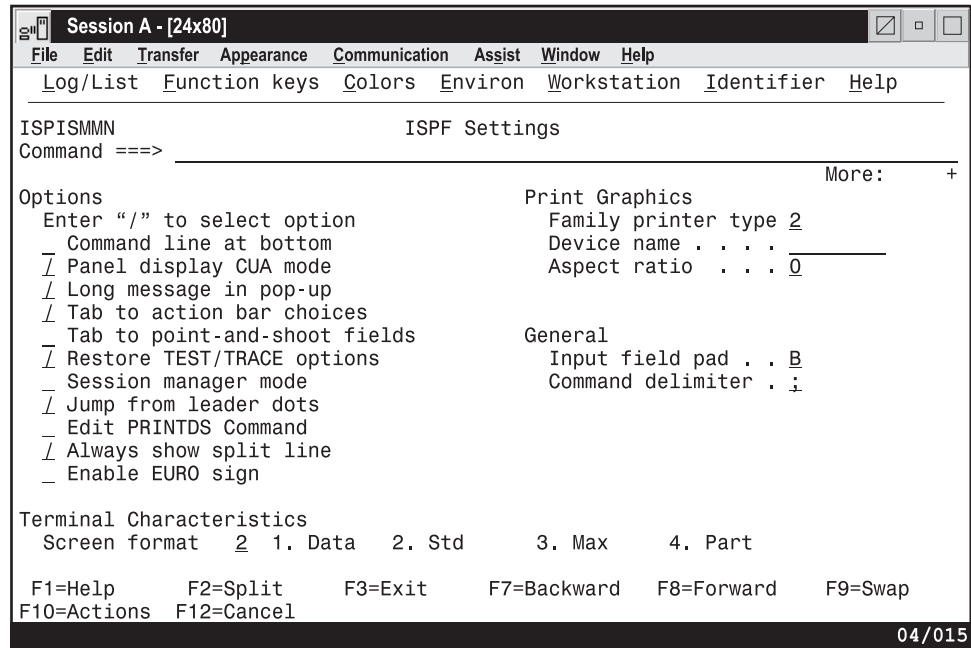


Figure 40. Panel Displayed with the Panel Identifier Set to On

Chapter 2. View (Option 1)

The View option (1) displays the View Entry Panel shown in Figure 41 on page 60 to enable you to view or browse source data and listings stored in ISPF libraries or other partitioned or single-volume or multivolume sequential data sets.

View Allows you to use all Edit line commands, primary commands, and macros to manipulate the data.

View functions exactly like Edit, with the following exceptions:

- **SAVE primary command.** When you enter the SAVE command, ISPF issues a message that you must use the CREATE command to save any data you have changed.
- **END primary command.** When you enter the END command, ISPF terminates the View function; no data changes are saved.

Browse

Allows you to use the Browse primary commands described in "Browse Primary Commands" on page 63 to manipulate data.

ISPF is shipped with View enabled. You can disable View, thus allowing only Browse, by modifying the ISPF Configuration Table. You must set the keyword **IS_VIEW_SUPPORTED** to **NO**. For more information, see the section called "ISPF Configuration Table" in the *ISPF Planning and Customizing* manual.

You can view or browse data that has the following characteristics:

- Record Format (RECFM):
 - Fixed, variable (non-spanned), or undefined
- Logical Record Length (LRECL):
 - For fixed-length records, up to 32 760 characters

Note: If you try to view a data set with RECFM=U, the Browse function is substituted.

- Blocked or unblocked
- With or without printer control characters

Note: For view only, the *minimum* record length is 10 characters.

- For variable-length records, up to 32 756 characters.

Note: For view only, the *minimum* record length is 14 characters.

- VSAM data
 - VSAM data can be browsed if the ISPF Configuration table has been customized to enable VSAM support.

Note: When the ISPF Configuration table is customized to enable VSAM support (that is, VSAM_BROWSE_ENABLED or VSAM_VIEW_ENABLED are set to "YES"), the default value for VSAM_BROWSE_COMMAND or VSAM_VIEW_COMMAND is "DITTO VB /".

View (Option 1)

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu RefList RefMode Utilities Workstation Help

View Entry panel

Command ==> _____

ISPF Library:

Project . . . PDFTDEV

Group . . . HELEN . . . _____ . . . _____ . . . _____

Type . . . MSGGEN

Member . . . _____ (Blank or pattern for member selection list)

Other Partitioned, Sequential or VSAM Data Set:

Data Set Name . . . _____

Volume Serial . . . _____ (If not cataloged)

Workstation File:

File Name . . . _____

Options

Initial Macro . . . _____ / Confirm Cancel/Move/Replace

Profile Name . . . _____ - Browse Mode

Format Name . . . _____ - View on Workstation

Data Set Password . . . _____ - Warn on First Data Change

_____ - Mixed Mode

F1=Help F3=Exit F10=Actions F12=Cancel

09/025

Figure 41. View Entry Panel (ISRBR001)

View Entry Panel Action Bar

The View Entry Panel action bar choices function as follows:

- | | |
|--------------------|---|
| Menu | See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down. |
| RefList | See the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral lists. |
| RefMode | See the Personal List Modes section of the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral list modes. |
| Utilities | See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down. |
| Workstation | The Workstation pull-down offers you one choice:
1. Workstation Tool Integration
See the ISPF Workstation Tool Integration Program section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for more information. |
| Help | The Help pull-down offers you the following choices:
1 General
2 View entry panel
3 Member selection list
4 Scrolling data
5 Types of Data Sets - View
6 View display screen format
7 Sequence numbering - View |

8	Display modes - View
9	Tabbing - View
10	Automatic recovery - View
11	Edit profiles
12	Edit line commands
13	Edit primary commands
14	Labels and line ranges - View
15	Ending a view session
16	Types of Data Sets - Browse
17	Browse display screen format
18	Assigning Browse labels
19	Browse commands
20	Terminating Browse
22	Index

View Entry Panel Fields

The *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* contains information about all the fields on the View Entry Panel except the following:

Initial Macro

You can specify an Edit macro to be processed before you begin viewing your sequential data set or any member of a partitioned data set. This initial macro enables you to set up a particular environment for the View session you are beginning.

If you leave the **Initial Macro** field blank and your Edit profile includes an initial macro specification, the initial macro from your Edit profile is processed.

If you want to suppress the processing of an initial macro in your Edit profile, enter NONE in the **Initial Macro** field.

Profile Name

You can specify a profile name to override the default Edit profile.

Format Name

Contains the name of a format definition, which is used to view or browse a formatted data set.

Browse Mode

Specifies that you want to browse the data set using the Browse function. This function is useful for large data sets and data sets that are formatted RECFM=U.

Confirm Cancel/Move/Replace

Specifies that you want ISPF to display a confirmation panel whenever you issue a Cancel, Move, or Replace command.

Mixed Mode

Specifies that you want to view or browse unformatted data that contains both EBCDIC and DBCS characters.

View on Workstation

Specifies that you want to view the data on your workstation. This option requires a workstation connection to be used.

Warn on First Data Change

Specifies that you want ISPF to warn you that changes cannot be saved in View. The warning is displayed when the first data change is made.

Browsing a Data Set

If you select Browse Mode on the View Entry Panel, ISPF displays either a member selection list or a Browse data display. See the **Using Member Selection Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* if you need information about displaying a member list.

Note: If you specify a volume serial on the View Entry Panel, you can browse a single volume of a non-SMS multivolume data set.

A Browse data display is shown in Figure 42.

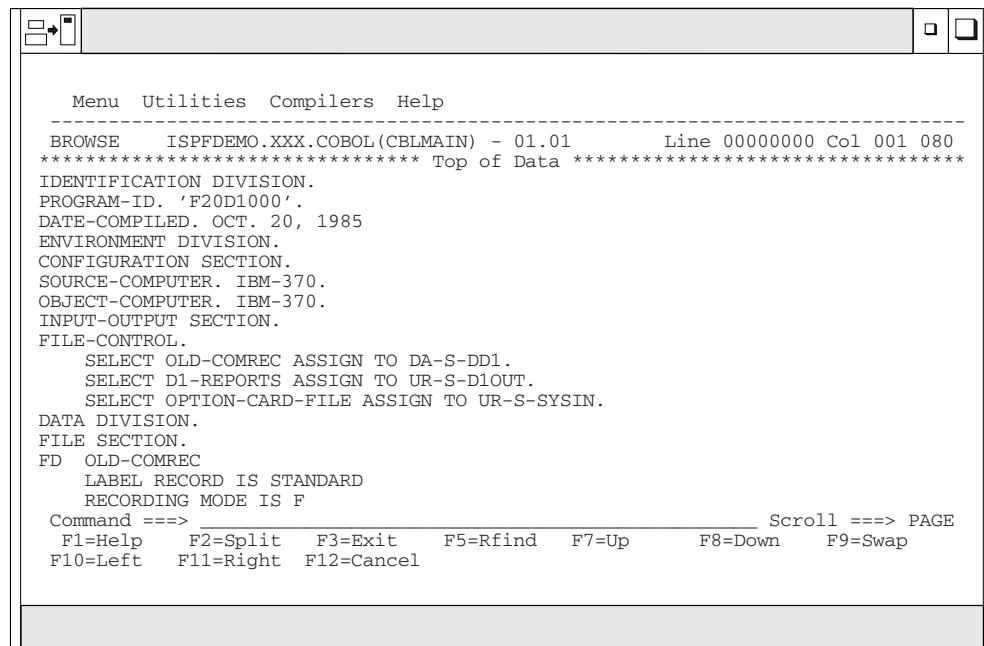


Figure 42. Browse - Data Display (ISRBROBA)

Each character in the data that cannot be displayed is changed on the display to either a period or a character that you have specified. Using the **DISPLAY** command, you can specify whether printer carriage-control characters are to be treated as part of the data, and thus displayed.

During Browse, four-way scrolling is available through the scroll commands. You can also use the **FIND** and **LOCATE** commands to scroll to a particular character string, line number, or symbolic label.

Whenever you enter a command, such as **FIND** or one of the scroll commands, that puts the cursor under a character string in the data set, ISPF highlights that character string. This highlighting occurs whether you type the command on the command line and press **Enter** or press a function key that the command is assigned to.

Ending Browse

To end a Browse data display, use the **END** command. This returns you to the previous panel, which is either a member list display or the View Entry panel. If a

member list is displayed, the name of the member you just browsed is at the top of the list. You can select another member from the list or enter the END command again to return to the View Entry Panel.

When the View Entry Panel is displayed again, you can select another data set or member, or you can use the END command to return to the ISPF Primary Option menu.

Browse Primary Commands

You can prefix any BROWSE command with an ampersand to keep the command displayed on the command line after the command has been processed. This technique allows you to repeat similar commands without reentering the data. For example, if you enter:

```
Command ==>> &FIND ABCD
```

the command is displayed after the string has been found, which allows you to then change the operand and issue another FIND command.

Browse provides 10 functions, described in the following sections, each of which is controlled by a command that you can type on the command line:

BROWSE	Browsing recursively
COLUMNS	Identifying columns
DISPLAY	Controlling the display
EDIT	Editing a member
FIND	Finding character strings
HEX	Displaying data in hexadecimal format
LOCATE	Locating lines
RESET	Removing the column-identification line
SUBMIT	Submitting browse data as a job stream for background execution
VIEW	Viewing a member.

BROWSE—Browsing Recursively

The BROWSE command allows you to browse another member of the same data set. It also allows you to browse any other data set without ending your current Browse session.

The BROWSE command has the following syntax:

```
BROWSE [member]
```

where:

member

An optional member of the ISPF library or other partitioned data set that you are currently browsing. You may enter a member pattern to generate a member list.

For example, if you were browsing a member of library ISPFDEMO.XXX.COBOL, you could enter the following command to display the panel shown in Figure 42 on page 62:

```
BROWSE CBLMAIN
```

If you do not specify a member name, the Browse Command - Entry Panel is displayed.

Browsing a Data Set

You end a nested Browse session the same way you would a normal one. When you end the nested Browse session, the current Browse session resumes.

COLUMNS—Identifying Columns

You can use the COLUMNS command to provide a temporary indication of where columns occur on the panel. This command displays a column-identification line on the first line of the data area. The command has the following syntax:

COLUMNS [ON | OFF]

where:

ON The default. Displays the column-identification line.

OFF Removes the column-identification line from the display.

Note: You can also remove the column-identification line by entering the RESET command.

An example of the column-identification line is shown in Figure 43. The digits on the identification line show the tens positions: 1 shows column 10, 2 shows column 20, and so forth. The plus signs (+) show the fives positions (columns 5, 15, 25, and so forth.)

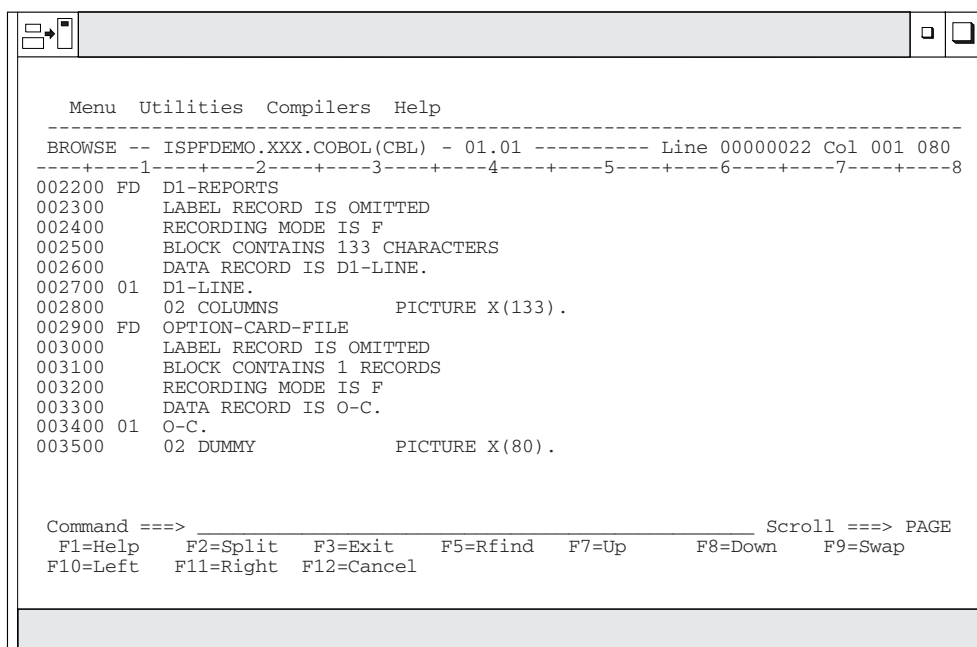


Figure 43. Browse - Column-Identification Line (ISRBROBA)

DISPLAY—Controlling the Display

The DISPLAY command allows you to display carriage control characters and characters that cannot normally be displayed. It has the following syntax:

DISPLAY {char} {NOCC | CC}

You must enter at least one operand, but you can enter them in any order. If you enter only one operand, the other operand retains its current value.

where:

char The character you want to use to represent characters that cannot be displayed on the screen. It can be a single character, or a single character enclosed in apostrophes (') or quotation marks ("). If you specify a blank as the character, you must enclose it in apostrophes or quotation marks.

CC Shows that carriage control characters are to be displayed and are to be considered part of the data.

NOCC

Shows that carriage control characters are not to be displayed and are not to be considered part of the data.

Both operands are stored in your user profile and are in effect whenever you are using Browse. You need to reenter the DISPLAY command only if you want to change one of the operands.

The first settings for display mode are period (.) and NOCC, but the carriage control character status has no effect if the data that you are browsing has no carriage control characters.

The following examples show three different ways to enter the DISPLAY command:

- To use blanks to represent characters that cannot be displayed, enter:
DISPLAY " "
- To use a vertical bar (|) to represent characters that cannot be displayed, enter:
DISPLAY |
- To suppress the display of carriage control characters, enter:
DISPLAY NOCC

EDIT—Editing a Member

The EDIT command allows you to edit another member of the same data set. It also allows you to edit any other data set without ending your current Browse session.

The EDIT command has the following syntax:

EDIT [*member*]

where:

member

An optional member of the ISPF library or other partitioned data set that you are currently browsing. You may enter a member pattern to generate a member list.

For example, if you were browsing a member of library ISPFDEMO.XXX.COBOLE, you could enter the following command to display the panel shown in Figure 42 on page 62:

```
EDIT CBLMAIN
```

If you do not specify a member name, the Edit Command - Entry Panel is displayed.

You end a nested Edit session the same way you would a normal one. When you end the nested Edit session, the current Browse session resumes.

Browsing a Data Set

FIND—Finding Character Strings

The FIND command allows you to find a specified character string. The syntax of the FIND command is:

```
FIND string [NEXT] [CHARS] [col-1 [col-2]]  
                [ALL]  [PREFIX]  
                [FIRST] [SUFFIX]  
                [LAST]  [WORD]  
                [PREV]
```

Note: FIND as a Browse command, shown here, has the same syntax as FIND as an Edit command, except the optional X/NX/EX and line range operands are not included.

where:

string

Required operand. The character string you want to find.

NEXT | ALL | FIRST | LAST | PREV

Optional operands that define the starting point, direction, and extent of the search. NEXT is the default.

CHARS | PREFIX | SUFFIX | WORD

Optional operand. Operands that set the conditions for a character string match. CHARS is the default.

col-1 and col-2

Optional operands. Numbers that identify the columns the FIND command is to search.

You can separate the operands with blanks or commas and you can type them in any order, but *col-2*, if typed, must follow *col-1*.

Specifying Find Strings: The string operand specifies the characters to be found. For examples of different string formats, refer to the description of the FIND command in *ISPF Edit and Edit Macros*

The default is not to differentiate between uppercase and lowercase characters when searching. Except for the character (C) string, differences between uppercase and lowercase strings are ignored. For example, this command:

```
FIND ALL 'CONDITION NO. 1'
```

successfully finds any of the following:

```
CONDITION NO. 1  
Condition No. 1  
condition No. 1  
condition no. 1
```

Omitting String Delimiters:

Generally, you enter the strings without delimiters. For example, to find all occurrences of ABC, enter:

```
FIND ALL ABC
```

Using String Delimiters: You must use delimiters if a string contains imbedded blanks or commas, or if a string is the same as a command keyword. You delimit strings with either apostrophes (') or quotation marks ("). For example, to find the next occurrence of every one, enter:

FIND 'every one'

The FIND command does not find the apostrophe or quotation mark string delimiters.

Note: The Browse FIND command does not work with a search argument that contains the command delimiter, even if string delimiters are used. You can specify a hexadecimal search string or use ISPF Option 0 to change the command delimiter to a different character.

Starting Point, Direction, and Extent of Search: You can control the starting point, direction, and extent of the search by using one of the following operands:

- NEXT** The scan starts at the first position after the current cursor location and searches ahead to find the next occurrence of the string. NEXT is the default.
- ALL** The scan starts at the top of the data and searches ahead to find all occurrences of the string. A message in the upper-right corner of the screen shows the number of occurrences found. The second-level message that is displayed when you enter the HELP command shows which columns were searched.
- FIRST** The scan starts at the top of the data and searches ahead to find the first occurrence of the string.
- LAST** The scan starts at the bottom of the data and searches backward to find the last occurrence of the string.
- PREV** The scan starts at the first position before the current cursor location and searches backward to find the previous occurrence of the string.

If you specify FIRST, ALL, or NEXT, the direction of the search is forward; pressing the RFIND function key (F5/17) finds the next occurrence of the designated string. If you specify LAST or PREV, the direction of the search is backward; pressing the RFIND function key finds the previous occurrence of the string. The other optional operands remain in effect, as specified in the last FIND command. These operands include CHARS, WORD, PREFIX, SUFFIX, and *col-1, col-2*.

The search proceeds until one or all occurrences of the string are found, or until the end of data is found. If the string is not found, one of the following actions takes place:

- If the FIND command was entered on the Command line, a *NO string FOUND* message is displayed in the upper-right corner of the screen.
- If the FIND command was repeated using the RFIND command, either a BOTTOM OF DATA REACHED message or a TOP OF DATA REACHED message is displayed, depending on the direction of the search. When these messages appear, you can press the RFIND function key again to continue the search by wrapping to the top or bottom of the data. If the string is still not found anywhere in the data, a *NO string FOUND* message is displayed.

Conditions for Character String Matches: The operands CHARS, PREFIX, SUFFIX, and WORD control the conditions for a successful match with the string based on whether the data string begins and/or ends with a non-alphanumeric character; that is, a special character or a blank. You can abbreviate PREFIX, SUFFIX, and CHARS to PRE, SUF, and CHAR, respectively.

Browsing a Data Set

In the following illustration, the underscored strings would be found and the non-underscored strings would be ignored:

```
CHARS 'DO' - DO DONT ADO ADOPT 'DO' +ADO (DONT) ADO-  
PREFIX 'DO' - DO DONT ADO ADOPT 'DO' +ADO (DONT) ADO-  
SUFFIX 'DO' - DO DONT ADO ADOPT 'DO' +ADO (DONT) ADO-  
WORD 'DO' - DO DONT ADO ADOPT 'DO' +ADO (DONT) ADO-
```

If you do not specify an operand, the default is CHARS.

Using Text Strings: Text strings are processed exactly the same as delimited strings. They are provided for compatibility with prior versions of the product.

Using Character Strings: A character string, which may be used as a string operand in a FIND command, requires that the search be satisfied by an exact character-by-character match. Lowercase alphabetic characters match only with lowercase alphabetic characters and uppercase alphabetic characters match only with uppercase.

For example:

```
FIND C'XYZ'
```

would find the characters XYZ only if they were in uppercase, while:

```
FIND C'xyz'
```

would find the characters xyz only if they were in lowercase.

If you specify a text string that contains any SO or SI characters, the string is considered a character string.

Using Picture Strings: A picture string used as a string operand in a FIND command allows you to search for a particular type of character, without regard for the specific character involved. You can use special characters within the picture string to represent the type of character to be found, as follows:

String Meaning

P'=' Any character
P'~' Any nonblank character
P'.' Any nondisplayable (invalid) character
P'#' Any numeric character (0–9)
P'-' Any nonnumeric character
P'@' Any alphabetic character (uppercase or lowercase).

String Meaning

P'<' Any lowercase alphabetic character
P'>' Any uppercase alphabetic character
P'\$' Any special character (not alphabetic or numeric).

If an APL or TEXT keyboard is being used, the following additional character can be used in a picture string:

P'␣' Any APL-specific or TEXT-specific character
P'_' Any underscored alphabetic APL character and delta.

Only the special characters listed above are valid within a picture string, but the string can include alphabetic or numeric characters that represent themselves.

A DBCS subfield cannot be specified as the subject of a picture string for the FIND command.

Examples of picture strings:

P'###'

A string of 3 numeric characters

P'~ ~'

Any 2 nonblank characters separated by a blank

P'.'

Any nondisplayable character

P' #'

A blank followed by a numeric character

P'#AB'

A numeric character followed by 'AB'.

Examples of FIND commands using picture strings:

FIND P'.'

Find next nondisplayable character

FIND P'~' 72

Find next nonblank character in column 72

F P' ~' 1

Find the next line with a blank in column 1 followed by a nonblank.

When you use the special characters '=' or '.' and a nondisplayable character is found, a hexadecimal representation is used in the confirmation message that appears in the upper-right corner of the screen. For example:

FIND P'..''

could result in the message CHARS X'0205' FOUND.

Column Limitations: The *col-1* and *col-2* operands allow you to search only a portion of each line, rather than the complete line. These operands, which are integers separated by a comma or by at least one blank, show the starting and ending columns for the search. The following rules apply:

- If you specify neither *col-1* nor *col-2*, the search continues across all columns within the current boundary columns.
- If you specify *col-1* without *col-2*, the string is found only if it starts in the specified column.
- If you specify both *col-1* and *col-2*, the complete string, not just part of it, must be within the specified columns.

Using RFIND: The RFIND command, which is usually assigned to the F5/17 key, allows you to repeat the previous FIND command without retyping it. Therefore, you can use this command to find successive occurrences of the string specified in the last FIND command. You can also use the RFIND command to return to the top of your data and continue searching when the BOTTOM OF DATA REACHED message appears. If you enter the RFIND command on the Command line instead of using a function key, you must position the cursor to the desired starting location before pressing Enter.

If you specify a 1-byte hexadecimal string as the FIND string and the string is found at the second byte of a double-byte character set (DBCS) character, hardware sets the cursor to the first byte of the character. If you then request RFIND, the same data is found again. To find the next occurrence of the string, you must move the cursor to the next character position before requesting RFIND again.

Browsing a Data Set

HEX—Displaying Data in Hexadecimal Format

The HEX command causes data to be displayed in hexadecimal format. The syntax of the command is:

HEX [ON | OFF] [VERT | DATA]

You can specify the operands in any order:

where:

ON Turns hexadecimal mode on. This is the default.

OFF Turns hexadecimal mode off.

VERT

Valid only when hexadecimal mode is ON. This is the default. Figure 44 on page 71 shows how VERT causes the hexadecimal representation to be displayed vertically, two rows per byte, under each character.

DATA

Valid only when hexadecimal mode is ON. Figure 45 on page 71 shows how DATA causes the hexadecimal representations to be displayed as a string of hexadecimal characters, two per byte. Since the hexadecimal string is twice the length of the data string, it consumes two rows. If you omit this operand, VERT is assumed.

When using browse and placing the cursor anywhere within the record, SCROLL UP positions the data where the cursor is located as the last complete line record on the display. A complete line record consists of the standard character form line, two hexadecimal character lines, and a separator line.

For example, the following command would display the hexadecimal notation vertically:

HEX VERT

Three lines are displayed for each source line. The first line shows the data in standard character form. Figure 44 on page 71 shows the next two lines with the same data in vertical hexadecimal representation. A separator line is displayed between the two representations to make it easier for you to read the data.

To display the hexadecimal notation horizontally, use this command:

HEX DATA

Figure 45 on page 71 shows the next two lines with the same data in DATA hexadecimal representation.

You can use the FIND command to find invalid characters or any specific hexadecimal character regardless of the setting of hexadecimal mode. Refer to the syntax for picture strings and hexadecimal strings under the description of the FIND command in *ISPF Edit and Edit Macros*

```

Menu Utilities Compilers Help
-----
BROWSE -- USERID.PRIVATE.SCRIPT(BHEX) - 01.00 ----- Line 00000000 Col 001 076
***** Top of Data *****

-----
:H3 ID=BRHEX SUBJECT='BROWSE COMMANDS - HEX'.
7CF4CC7CDCCE4EECDCE77CDDEEC4CDDDCDCE464CCE74
A83094E2985702421533ED296625036441542000857DB
-----
HEX - DISPLAYING DATA IN HEXADECEMAL FORMAT
CCE464CCEDDCECD4CCEC4CD4CCECCCCDCD4CDDDCCE
8570004927318957041310950857145394130669413
-----
:P.THE DISPLAY OF DATA IN HEXADECEMAL NOTATION IS CONTROLLED BY THE HEX
7D4ECC4CCEDDCE4DC4CCEC4CD4CCECCCCDCD4DDECECDD4CE4CDEDDDDCC4CE4ECC4CCE
A7B38504927318066041310950857145394130563139650920365396335402803850857
-----

Command ==>                               Scroll ==> PAGE
F1=Help   F2=Split   F3=Exit   F5=Rfind   F7=Up   F8=Down   F9=Swap
F10=Left  F11=Right  F12=Cancel

```

Figure 44. Browse Hexadecimal Display - Vertical (ISRBROBA)

```

Menu Utilities Compilers Help
-----
BROWSE -- USERID.PRIVATE.SCRIPT(BHEX) - 01.00 ----- Line 00000000 Col 001 076
***** Top of Data *****

-----
:H3 ID=BRHEX SUBJECT='BROWSE COMMANDS - HEX'.
7AC8F340C9C47EC2D9C8C5E740E2E4C2D1C5C3E37E7DC2D9D6E6E2C540C3D6D4D4C1D5C4E2406040
C8C5E77D4B
-----
HEX - DISPLAYING DATA IN HEXADECEMAL FORMAT
C8C5E7406040C4C9E2D7D3C1E8C9D5C740C4C1E3C140C9D540C8C5E7C1C4C5C3C9D4C1D340C6D6D9
D4C1E3
-----
:P.THE DISPLAY OF DATA IN HEXADECEMAL NOTATION IS CONTROLLED BY THE HEX
7AD74BE3C8C540C4C9E2D7D3C1E840D6C640C4C1E3C140C9D540C8C5E7C1C4C5C3C9D4C1D340D5D6
E3C1E3C9D6D540C9E240C3D6D5E3D9D6D3D3C5C440C2E840E3C8C540C8C5E7
-----

Command ==>                               Scroll ==>
F1=Help   F2=Split   F3=Exit   F5=Rfind   F7=Up   F8=Down   F9=Swap
F10=Left  F11=Right  F12=Cancel

```

Figure 45. Browse Hexadecimal Display - Data (ISRBROBA)

LOCATE—Locating Lines

Use the LOCATE command to bring a particular line to the top of the display. You can identify the line by either its relative line number or a previously defined label.

During Browse, the current position of the screen window is shown by the line/column numbers in the upper-right corner of the screen. The line number refers to the first line of data following the two header lines, and shows the

Browsing a Data Set

relative position of that line in the data. The Top of Data message is treated as relative line zero. You must enter either a line number or a label as an operand.

LOCATE {*line-number* | *label*}

where:

line-number

A numeric value of up to 8 digits that shows the position of the line from the beginning of the data. The line number is displayed in the upper-right corner.

label

Defined by scrolling to the top of the screen the line with which you want to associate the label. You then type the label on the command line in the form:

.cccccc

For example, to find line 18463, you could enter the following command:

LOCATE 18463

ISPF then moves line 18463 to the top of the screen. You can assign a label to it by entering:

.label

The label is a period followed by up to seven characters that can be displayed, except the comma and the space. It is treated as an internal symbol and is equated to the top line on the screen. You are required to specify the period when you define the label. The next time you want to find this line, you can enter:

LOCATE .label

The period is usually optional when you use it as an operand in a LOCATE command. However, if the first character in the label is a number, you must specify the period to distinguish the label from a line number.

The latest assignment of a label overrides any previous assignments. You can assign several labels to the same line. Labels are not retained when you leave the Browse option.

RESET—Removing the Column-Identification Line

The RESET command removes the column-identification line that you can display by using the COLUMNS command. This command has no operands. An example of the column-identification line is shown in Figure 43 on page 64.

SUBMIT—Submitting a Job Stream

The SUBMIT command is used to submit a job stream that is being browsed. If the data set being browsed is modified and saved by another user or by the same user on another screen, the SUBMIT command will submit the updated data set, not the copy being browsed. The TSO SUBMIT command is invoked directly to submit the job stream, so the data set has to be fixed-record format with a record length of 80.

Note: The Browse SUBMIT command is not supported if the underlying data is packed.

VIEW—Viewing a Member

The VIEW command allows you to view another member of the same data set. It also allows you to view any other data set without ending your current Browse session.

The VIEW command has the following syntax:

VIEW [*member*]

where:

member

An optional member of the ISPF library or other partitioned data set that you are currently browsing. You may enter a member pattern to generate a member list.

For example, if you were browsing a member of library ISPFDEMO.XXX.COBOLE, you could enter the following command to display the panel shown in Figure 42 on page 62:

```
VIEW CBLMAIN
```

If you do not specify a member name, the View Command - Entry Panel is displayed.

You end a nested View session the same way you would a normal one. When you end the nested View session, the current Browse session resumes.

Chapter 3. Edit (Option 2)

The Edit option (2) allows you to create, display, and change data stored in ISPF libraries or other partitioned or single-volume or multivolume sequential data sets with the following characteristics:

- Record Format (RECFM):
 - Fixed or variable (non-spanned)
 - Blocked or unblocked
 - With or without printer control characters
- Logical Record Length (LRECL):
 - From 10 to 32 760, inclusive, for fixed-length records
 - From 14 to 32 756, inclusive, for variable-length records.
- VSAM data
 - VSAM data can be edited if the ISPF Configuration table has been customized to enable VSAM support.

Note: When the ISPF Configuration table is customized to enable VSAM support (that is, VSAM_EDIT_ENABLED is set to "YES"), the default value for VSAM_EDIT_COMMAND is "DITTO VE /".

If you have made a connection to the workstation, you can also specify a workstation file name, for example **C: \AUTOEXEC.BAT**, on the Edit Entry Panel. Or you can specify which environment (host or workstation) should be used to edit a data set. With these options, one of four editing situations can occur:

- Edit a host data set on the host
- Edit a host data set on the workstation
- Edit a workstation file on the host
- Edit a workstation file on the workstation.

Edit a Host Data Set on the Host

The editor searches the ISPF libraries in the designated order to find the member and copy it into working storage. If you specified a nonexistent member of an ISPF library, a new member is created with the specified name.

When you save the edited member, the editor places or replaces it in the first ISPF library in the concatenation sequence, regardless of which library it was copied from.

Edit a Host Data Set on the Workstation

The editor searches the ISPF libraries in the designated order to find the member and copy it into working storage. The data set name is converted to a workstation file name, and that name is appended to the workstation's current working directory. The host data set is transferred to the workstation, and the working file is then passed to the user's chosen edit program.

When you finish the edit session, the working file is transferred back to the host and stored in the first ISPF library in the concatenation sequence.

Note: There are file names that are reserved or restricted depending on the workstation operating system. An attempt to edit a file name that is reserved or restricted by your operating system might cause your

Edit (Option 2)

workstation operating system or host system to hang. See your workstation operating system documentation to learn restricted or reserved file names.

Edit a Workstation File on the Host

The editor searches the workstation files to find the desired file and copy it into working storage. The workstation file name is converted to a host data set name, and, if greater than 44 characters, it is truncated to be 44. The workstation file is transferred to the host, where you can edit it.

When you finish the edit session, the working file is transferred back to the workstation and stored.

Note: There are file names that are reserved or restricted depending on the workstation operating system. An attempt to edit a file name that is reserved or restricted by your operating system might cause your workstation operating system or host system to hang. See your workstation operating system documentation to learn restricted or reserved file names.

Edit a Workstation File on the Workstation

This edit proceeds as it normally does on your workstation.

Note: There are file names that are reserved or restricted depending on the workstation operating system. An attempt to edit a file name that is reserved or restricted by your operating system might cause your workstation operating system or host system to hang. See your workstation operating system documentation to learn restricted or reserved file names.

Editing a Data Set

When you select the Edit option, the Edit Entry Panel shown in Figure 46 is displayed.

The screenshot shows the 'Session A - [24x80]' window with the 'Edit Entry Panel' displayed. The panel has a menu bar with 'File', 'Edit', 'Transfer', 'Appearance', 'Communication', 'Assist', 'Window', and 'Help'. Below the menu bar, the 'Edit Entry Panel' title is centered. The panel contains several sections: 'ISPF Library' with fields for Project (PDEFDEV), Group (ROSEMARY), Type (MSGGEN), and Member (blank); 'Other Partitioned, Sequential or VSAM Data Set:' with fields for Data Set Name and Volume serial; 'Workstation File:' with a File Name field; and 'Options' with checkboxes for 'Confirm Cancel/Move/Replace' (checked), 'Mixed Mode', 'Edit on Workstation', and 'Preserve VB record length'. At the bottom, there is a 'Command ===>' line and a grid of function keys: F1=HELP, F2=SPLIT, F3=END, F4=RETURN, F5=RFIND, F6=RCHANGE, F7=UP, F8=DOWN, F9=SWAP, F10=LEFT, F11=RIGHT, and F12=RETRIEVE. The bottom right corner shows the page number '07/028'.

Figure 46. Edit Entry Panel (ISREDM01)

Edit Entry Panel Action Bar

The Edit Entry Panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

RefList

See the *Using Personal Data Set Lists and Library Lists* chapter of the *ISPF User's Guide Volume I* for information on referral lists.

RefMode

See the **Personal List Modes** section of the *Using Personal Data Set Lists and Library Lists* chapter of the *ISPF User's Guide Volume I* for information on referral list modes.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Workstation

Configure ISPF workstation tool integration.

Help The Help pull-down offers you the following choices:

- 1 General
- 2 Type of Data Sets
- 3 Edit entry panel
- 4 Member selection list
- 5 Display screen format
- 6 Scrolling data
- 7 Sequence numbering
- 8 Display modes
- 9 Tabbing
- 10 Automatic recovery
- 11 Edit profiles
- 12 Edit line commands
- 13 Edit primary commands
- 14 Labels and line ranges
- 15 Ending an edit session
- 16 Appendices
- 17 Index

Edit Entry Panel Fields

You can specify a concatenated sequence of up to four ISPF libraries, but the libraries must have been previously allocated to ISPF with the Data Set utility (3.2).

The fields on this panel are:

Project The common identifier for all ISPF libraries belonging to the same programming project.

Group The identifier for the particular set of ISPF libraries; that is, the level of the libraries within the library hierarchy.

You can specify a concatenated sequence of up to four existing ISPF libraries.

Edit (Option 2)

The editor searches the ISPF libraries in the designated order to find the member and copies it into working storage. If the editor does not find the member in the library, it creates a new member with the specified name.

When you save the edited member, the editor places or replaces it in the first ISPF library in the concatenation sequence, regardless of which library it was copied from.

Type	The identifier for the type of information in the ISPF library.
Member	The name of an ISPF library or other partitioned data set member. Leaving this field blank or entering a pattern causes PDF to display a member list. Refer to <i>ISPF User's Guide</i> if you need information about entering a pattern.

Data Set Name

Any fully-qualified data set name, such as 'USERID.SYS1.MACLIB', or VSAM data set name. If you include your TSO user prefix (defaults to user ID), you must enclose the data set name in apostrophes. However, if you omit the TSO user prefix and apostrophes, your TSO user prefix is automatically added to the beginning of the data set name.

If you specify a VSAM data set name, ISPF checks the Configuration table to see if VSAM support is enabled. If so, the specified tool is invoked. If VSAM support is not enabled, an error message is displayed.

Volume Serial	A real DASD volume or a virtual volume residing on an IBM 3850 Mass Storage System. To access 3850 virtual volumes, you must also have MOUNT authority, which is acquired through the TSO ACCOUNT command.
----------------------	--

Workstation File:

If you have made a connection to the workstation, you can specify a workstation file name, for example C: \AUTOEXEC.BAT, in this field.

Initial Macro	You can specify a macro to be processed before you begin editing your sequential data set or any member of a partitioned data set. This initial macro allows you to set up a particular editing environment for the Edit session you are beginning. This initial macro overrides any IMACRO value in your profile.
----------------------	--

If you leave the **Initial Macro** field blank and your edit profile includes an initial macro specification, the initial macro from your edit profile is processed.

If you want to suppress an initial macro in your edit profile, type NONE in the **Initial Macro** field. See 'Initial Macros' and 'IMACRO-Specify an Initial Macro' in the *z/OS V1R2.0 ISPF Edit and Edit Macros, SC34-4820* manual for more details.

Profile Name	The name of an edit profile, which you can use to override the default edit profile. See the description in 'What is an Edit Profile' in the <i>z/OS V1R2.0 ISPF Edit and Edit Macros, SC34-4820</i> manual.
---------------------	--

Format Name	The name of a format definition or blank if no format is to be used.
--------------------	--

Data Set Password

The password for OS password-protected data sets. This is not your RACF* password.

Confirm Cancel/Move/Replace

When you select this field with a "/", a confirmation panel displays when you request one of these actions, and the execution of that action would result in data changes being lost or existing data being overwritten.

- For MOVE, the confirm panel is displayed if the data to be moved exists. Otherwise, an error message is displayed.
- For REPLACE, the confirm panel is displayed if the data to be replaced exists. Otherwise, the REPLACE command functions like the edit CREATE command, and no confirmation panel is displayed.
- For CANCEL, the confirmation panel is displayed if any data changes have been made, whether through primary commands, line commands, or typing.

Note: Any commands or data changes pending at the time the CANCEL command is issued are ignored. Data changes are "pending" if changes have been made to the displayed edit data, but no interaction with the host (ENTER, PF key, or command other than CANCEL) has occurred. If no other changes have been made during the edit session up to that point, the confirmation panel is not displayed.

Preserve VB record length

When you select this field with a "/", it specifies that the editor store the original length of each record in variable length data sets and when a record is saved, the original record length is used as the minimum length for the record. The minimum length can be changed using the SAVE_LENGTH edit macro command. The editor always includes a blank at the end of a line if the length of the record is zero or eight.

Mixed Mode When you select this field with a "/", it specifies that the editor look for shift-out and shift-in delimiters surrounding DBCS data. If you do not select it, the editor does not look for mixed data.

Edit on Workstation

You can select this option to use your workstation as the editing environment for whichever host data set or workstation file you want to edit.

Note: Double-Byte Character Set Support

The ISPF editor supports DBCS alphabets in two ways:

- Formatted data where DBCS characters are in the column positions specified in the format definition created with the Format Utility (option 3.11)
- Mixed characters delimited with the special shift-out and shift-in characters.

If you are using mixed mode and the record length of a data set is greater than 72 bytes, there is a possibility that a DBCS character might encroach on the display boundary. Here, PDF attempts to display the other

Edit (Option 2)

characters by replacing an unpaired DBCS character byte with an SO or SI character. If there is a possibility that the replaced SO or SI character was erased, the line number of the line is highlighted. If you change the position of the SO and SI characters on the panel, or if you delete the SO and SI characters entirely, the DBCS character on the boundary is removed to keep the rest of the data intact.

Chapter 4. Utilities (Option 3)

The Utilities option (3) provides a variety of functions for library, data set, and catalog maintenance, each of which is described in a section of this chapter. The Utility Selection Panel is shown in Figure 47.

<u>Menu</u> Help	
Utility Selection Panel	
1 Library	Compress or print data set. Print index listing. Print, rename, delete, browse, edit or view members
2 Data Set	Allocate, rename, delete, catalog, uncatalog, or display information of an entire data set
3 Move/Copy	Move, or copy members or data sets
4 Dslist	Print or display (to process) list of data set names. Print or display VTOC information
5 Reset	Reset statistics for members of ISPF library
6 Hardcopy	Initiate hardcopy output
7 Transfer	Download ISPF Client/Server or Transfer data set
8 Out list	Display, delete, or print held job output
9 Commands	Create/change an application command table
11 Format	Format definition for formatted data Edit/Browse
12 SuperC	Compare data sets (Standard Dialog)
13 SuperCE	Compare data sets Extended (Extended Dialog)
14 Search-For	Search data sets for strings of data (Standard Dialog)
15 Search-ForE	Search data sets for strings of data Extended (Extended Dialog)
Option ===>	
F1=Help	F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F10=Actions	F12=Cancel

Figure 47. Utility Selection Panel

Utility Selection Panel Action Bar

The Utility Selection Panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Help The Help pull-down offers you the following choices:

- 1 Library
- 2 Data Set
- 3 Move/Copy
- 4 Data Set List
- 5 Reset Statistics
- 6 Hardcopy
- 7 Transfer
- 8 Outlist
- 9 Commands
- 10 Format
- 11 SuperC
- 12 SuperCE
- 13 Search-For
- 14 Search-ForE
- 15 Appendices
- 16 Index

Library Utility (Option 3.1)

When you select this option, a panel is displayed (Figure 48) that allows you to specify a data set and an action to be performed. The Library utility is intended primarily for maintenance of partitioned data sets. However, the print index listing (X), print entire data set (L), data set information (I), and short data set information (S) functions also apply to sequential data sets.

```

Session A - [24x80]
File Edit Transfer Appearance Communication Assist Window Help
Menu RefList Utilities Help

Library Utility

Option ==>

blank Display member list      I Data set information      More: +
C Compress data set           S Short data set information D Delete member
X Print index listing         E Edit member              R Rename member
L Print entire data set       V View member              P Print member

ISPF Library:                  Enter "/" to select option
Project . . . PDFTDEV          / Confirm Member Delete
Group . . . BUTCH              - Enhanced Member List
Type . . . MSGGEN
Member . . .                   (If B, D, E, P, R, V, or blank selected)
New name . .                   (If R selected)

Other Partitioned or Sequential Data Set:
Data Set Name . . .
Volume Serial . . .           (If not cataloged)

F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel

14/024

```

Figure 48. Library Utility Panel (ISRUDA1)

Library Utility Panel Action Bar

The Library Utility panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

RefList

See the *Using Personal Data Set Lists and Library Lists* chapter of the *ISPF User's Guide Volume I* for information on referral lists.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help

The Help pull-down offers you the following choices:

- 1 Compressing a partitioned Data Set
- 2 Printing an Index listing
- 3 Printing an entire Data Set
- 4 Printing a member of a partitioned Data Set
- 5 Renaming a member of a partitioned Data Set
- 6 Deleting a member of a partitioned Data Set
- 7 Browsing a member of a partitioned Data Set
- 8 Editing a member of a partitioned Data Set
- 9 Viewing a member of a partitioned Data Set
- 10 Displaying a member list

11	Displaying Data Set Information
12	Appendices
13	Index

Library Utility Panel Fields

All the fields on the Library Utility panel, with the exception of the **New name** field, are discussed in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*. The **New name** field is required when option R (rename member) is chosen; the field must contain the new member name. See "R — Rename Member" on page 93 for more information about this option.

Library Utility Options for Data Sets

The following sections describe the options shown on the left side of the Library Utility panel shown in Figure 47 on page 81. These options are used to work with data sets.

Blank — (Display Member List)

If you leave the **Option** field blank, you must specify a partitioned data set. ISPF displays a member list when you press Enter. See the **Using Member Selection Lists** and **Library and Data Set List Utility Line Commands** sections of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.

Notes:

1. The column headers on a member list display (with the exception of Rename) are point-and-shoot sort fields.
2. If you enter a slash in the one-character or nine-character command field, the Member List Commands pop-up window shown in Figure 49 on page 84 is displayed so that you can select the command you want to use.
3. The one-character or nine-character line command field is a point-and-shoot field. If you select the line command field beside a member name, the Member List Commands pop-up window shown in Figure 49 on page 84 is displayed so that you can select the command you want to use. In addition, you can enter commands (TSO, etc.) directly in the nine-character field.
4. You can *chain* the P, R, D, V, E, and B commands; that is, you can select multiple members from a member list for various processing tasks. Use the CANCEL command (from a View, Browse, or Edit session) to break the chain and return to the member list.

Library Utility (Option 3.1)

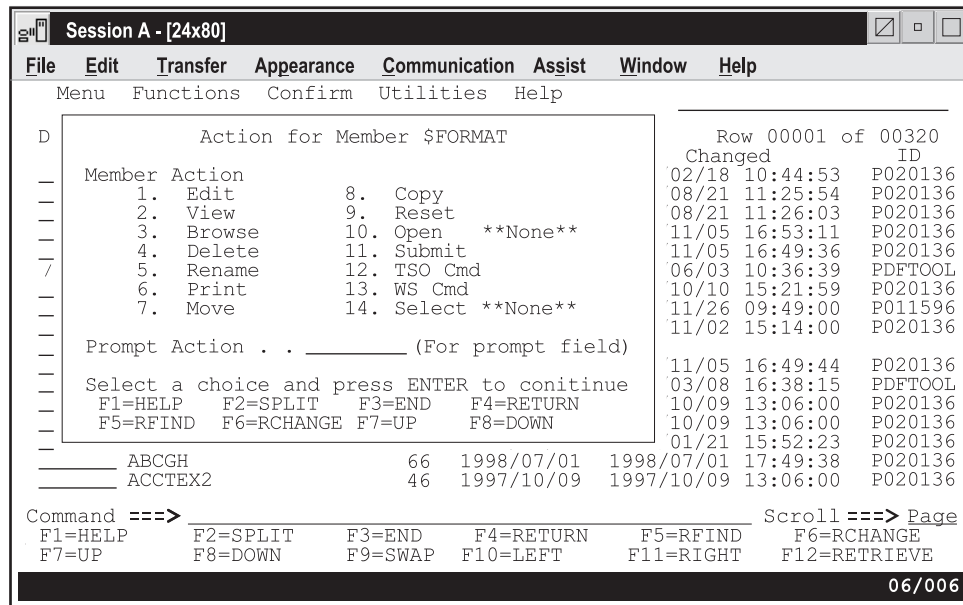


Figure 49. Member List Commands Pop-Up Window (ISRCMLEP)

C — Compress Data Set

If you select option C, you can specify any partitioned data set. The compress function is not valid for a PDSE. The compress is accomplished by calling either of the following:

- The IEBCOPY utility
- An optional compress request exit routine, which can be specified by your installation.

Using this option can change an existing data set allocation to *exclusive*.

ISPF allocates the IEBCOPY SYSUT3 and SYSUT4 data sets as one (1) primary cylinder, one (1) secondary cylinder. If this is not sufficient for your compress request, these DDNAMES can be preallocated.

X — Print Index Listing

If you select option X, you must specify either a DASD-resident sequential or partitioned data set. The index listing is recorded in the ISPF list data set. For a partitioned data set, the index listing includes general information about the data set followed by a member list. For a sequential data set, the index listing includes general information only. See *ISPF Dialog Developer's Guide and Reference* for examples of the index listing format for source libraries and load libraries.

Notes:

1. A volume serial is not allowed for multivolume data sets using option X.
2. If ISPF was entered in TEST mode, the listing also includes TTR data for each member of the data set. This data is the track and record address, where the members reside on the volume.

L — Print Entire Data Set

If you select option L, you must specify either a DASD-resident sequential or partitioned data set. The allowable data set characteristics are the same as for Browse, except that data sets with a logical record length greater than 300 characters are not printed. Also, the data should not contain any printer control characters. Use the Hardcopy utility (option 3.6) to print data sets that contain printer control characters. A source listing of the complete data set (including all members of a partitioned data set), preceded by an index listing, is recorded in the ISPF list data set.

Notes:

1. A volume serial is not allowed for multivolume data sets using option L.
2. The page-numbering format of the ISPF list data set is PAGE: XX of YY. The YY value is calculated using the data set member's current size statistic. When the member's current size is larger than the actual member size, the result is PAGE: XX of YY, where YY is a page number greater than the last value of XX. When the size statistic is smaller than the actual member size, the result is PAGE: XX of YY, until the actual size number XX exceeds YY. Then the result is PAGE: XX, until the end of the member is processed.

I — Data Set Information

If you select option I, the location, characteristics, and current space utilization of the specified data set are displayed. The format ISPF uses to display data set information when Data Facility Product (DFP) Version 3 Release 2 is not installed or available, or when the Storage Management Subsystem is not active, is shown in "U — Uncatalog Data Set" on page 105. See "Information for Managed Data Sets" on page 87 to see how ISPF displays data set information when these products are installed, available, and active.

Library Utility (Option 3.1)

For sequential data sets, options I and S display the same information. For multivolume data sets, options I and S display current allocation and utilization values that represent totals from all volumes used. You may not enter a volume serial when you are requesting information on a multivolume data set.

The space for data sets allocated in blocks is calculated as if all of the tracks, including the last one, contain only full blocks of data. Any partial “short” blocks are ignored.

Note: The information shown for the current space utilization is the actual data that the data set contains, based on the number of allocation units (blocks, tracks, bytes, megabytes, and so on) that have been written. For a data set allocated in units other than tracks and cylinders, it does not include the unused portion of a track that is only partially filled. For example, if a data set allocated in bytes with blocksize of 600 has one block written to a device with a track size of 1000, 600 bytes of data are written and the remaining 400 bytes cannot be used by a different data set. A track is the smallest possible unit of physical allocation to a data set on DASD. ISPF reports 600 bytes used while other products (such as ISMF) report 1000 bytes used. ISPF reports the space occupied by data in the data set. ISMF reports the space used by this data set that is not available for use by another data set. The difference is a relative indication of the effectiveness of the block size used when the data set was created.

```

Data Set Information

Data Set Name . . . : USERID.PRIVATE.PANELS

General Data
Management class . . : STANDARD
Storage class . . . : BASE
Volume serial . . . : PRM903
Device type . . . : 3390
Data class . . . :
Organization . . . : P0
Record format . . . : FB
Record length . . . : 80
Block size . . . : 6160
1st extent blocks . : 112
Secondary blocks . : 850
Data set name type : PDS

Current Allocation
Allocated blocks . : 112
Allocated extents . : 1
Maximum dir. blocks : 350

Current Utilization
Used blocks . . . : 64
Used extents . . . : 1
Used dir. blocks . : 1
Number of members . : 1

Creation date . . . : 1994/05/11
Referenced date . . :
Expiration date . . : ***None***

Command ==>
F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward   F9=Swap
F12=Cancel
```

Figure 50. Data Set Information (ISRUAIP)

If the volume serial is followed by a plus (for example, HSM016+), the data set spans multiple volumes. Press Enter to display a list of all allocated volumes that have been used, as shown in Figure 51 on page 87.

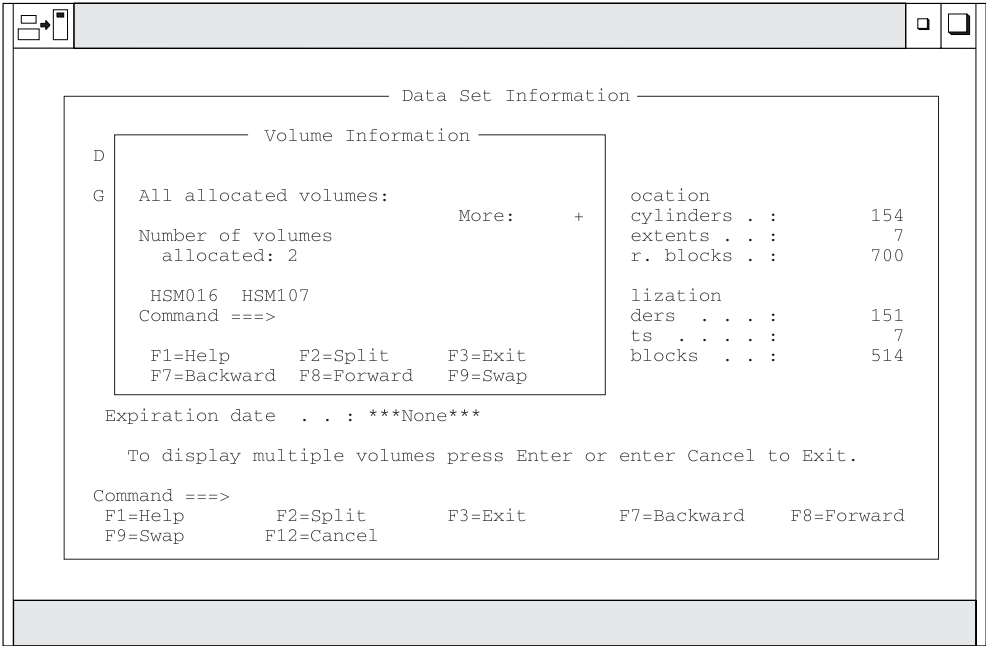


Figure 51. Volume Information for a Multivolume Data Set (ISRUMVI)

The **Allocated units** and **Used units** fields can vary, depending on the value that was specified in the **Space units** field when you allocated the data set. For example, the preceding panel shows what the Data Set Information panel would look like if the data set was allocated by specifying Cylinders in the **Space units** field.

Information for Managed Data Sets: The Library Utility option I (Figure 52 on page 88) displays information for data sets that reside on Storage Management Subsystem Volumes (also called managed data sets) when:

- Data Facility Product (DFP) Version 3 Release 2 or later is installed and available.
- Storage Management Subsystem is active.
- Directory block information is available.

Library Utility (Option 3.1)

```
Menu  RefList  Utilities  Help
-----Data Set Information-----

Data Set Name . . . . . : MYDATA2.MULTI
General Data
Management class . . . . : Current Allocation      More:  +
Storage class . . . . . : STANDARD      Allocated tracks . : 32
Volume . . . . . : BASE      Allocated extents . : 32
Device type . . . . . : HSM016 +
Data class . . . . . : 3380
Organization . . . . . : MULTIVOL      Current Utilization
Record format . . . . . : PS      Used tracks . . . . : 31
Record length . . . . . : FB      Used extents . . . . : 31
Block size . . . . . : 80
1st extent blocks . . . : 3120
Secondary blocks . . . : 17
Data set name type . . . :

Creation date . . . . :      Referenced date . . . . :

Command ==>
F1=Help      F2=Split      F3=Exit      F7=Backward      F8=Forward
F9=Swap      F12=Cancel
```

Figure 52. Data Set Information for Managed Data Sets (ISRUAISE)

If the volume serial is followed by a plus (for example, HSM016+), the data set spans multiple volumes.

Note: SMS-managed multivolume data sets will not display a plus unless data has been written past the first volume.

Press Enter to display a list of all allocated volumes as shown in Figure 53.

```
Menu  RefList  Utilities  Help
-----Data Set Information-----

D
G
Volume Information
All allocated volumes:      More:  +
HSM017 HSM018 HSM019 HSM020 HSM021
Allocation
ated tracks . . : 32
ated extents . . : 32
Utilization
tracks . . . . : 31
extents . . . . : 31
Secondary tracks . . : 17
Data set name type . . : 1

Command ==>
F1=Help      F2=Split      F3=Exit      F7=Backward      F8=Forward
F9=Swap      F12=Cancel
```

Figure 53. Volume Information for a Managed Multivolume Data Set (ISRUAMVI)

The major difference between this information and the information that is displayed for data sets on non-managed volumes is the addition of the following classes:

- Management class
- Storage class
- Data class.

If directory block information is not available, the Data Set Information panel shows a value of 0 * for the **Maximum dir. blocks**, **Used dir. blocks**, and **Number of members** fields. The asterisk beside the zero refers you to a note on the panel, which states that the directory is unavailable.

If the data set is a PDSE, the **Data set name type** field is LIBRARY and the **Maximum dir. blocks** field is NOLIMIT. Because the used blocks, used extents, and used directory blocks are not applicable to a PDSE, the Data Set Information panel replaces these values with **Used pages** and **% utilized** (Figure 54). Other values that can appear in the **Data set name type** field are:

- HFS - MVS Hierarchical File System data set
- EXTENDED - DFP Striped data set.

Note: When a PDSE data set is created, it sets aside five pages. This may cause a significant *% utilized* for a small data set.

```

Session A - [24x80]
File Edit Transfer Appearance Communication Assist Window Help
Data Set Information

Command ==>

Data Set Name . . . : P020136.PRIVATE.TABLES

General Data
Management class . . : STANDARD
Storage class . . . : BASE
Volume serial . . . : PRM906
Device type . . . : 3390
Data class . . . : **NONE**
Organization . . . : PD
Record format . . . : FB
Record length . . . : 80
Block size . . . : 27920
1st extent tracks . : 10
Secondary tracks . : 10
Data set name type : LIBRARY

Current Allocation
Allocated tracks . : 17
Allocated extents . : 5
Maximum dir. blocks : NOLIMIT

Current Utilization
Used pages . . . : 181
% Utilized . . . : 88
Number of members . : 48

Creation date . . . : 1999/12/06
Expiration date . . : ***NONE***
Referenced date . . : 2000/02/04

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F12=Cancel
02/015
  
```

Figure 54. Data Set Information for PDSE Managed Data Sets (ISRUAISE)

S — Short Data Set Information

If you select option S, information about the selected data set appears. The information displayed by option S is the same information displayed by option S of the Data Set utility (option 3.2), but it differs from option I in two respects. Information for partitioned data sets, when displayed by option S, lacks the number of maximum and used directory blocks, and the number of members. For sequential data sets, options I and S display the same information. You may not enter a volume serial when you are requesting information on multivolume data sets.

Library Utility (Option 3.1)

The space for data sets allocated in blocks is calculated as if all of the tracks, including the last one, contain only full blocks of data. Any partial “short” blocks are ignored.

Note: The information shown for the current space utilization is the actual data that the data set contains, based on the number of allocation units (blocks, tracks, bytes, megabytes, and so on) that have been written. For a data set allocated in units other than tracks and cylinders, it does not include the unused portion of a track that is only partially filled. For example, if a data set allocated in bytes with blocksize of 600 has one block written to a device with a track size of 1000, 600 bytes of data are written and the remaining 400 bytes cannot be used by a different data set. A track is the smallest possible unit of physical allocation to a data set on DASD. ISPF reports 600 bytes used while other products (such as ISMF) report 1000 bytes used. ISPF reports the space occupied by data in the data set. ISMF reports the space used by this data set that is not available for use by another data set. The difference is a relative indication of the effectiveness of the block size used when the data set was created.

Figure 55 shows a short format example of data set information for a partitioned data set. This is the short format ISPF uses to display data set information when Data Facility Product (DFP) Version 3 Release 2 or later is not installed or available, or when the Storage Management Subsystem is not active. See “Short Information for Managed Data Sets” on page 91 to see how ISPF displays data set information when these products are installed, available, and active.

The screenshot shows a terminal window with a title bar containing a menu icon and window control buttons. The main content area is titled "Data Set Information" and displays the following data:

Data Set Name . . . : USERID.SAMPLE	
General Data	
Volume serial . . . : HSM029	Current Allocation
Device type . . . : 3390	Allocated cylinders . . : 154
Organization . . . : PO	Allocated extents . . . : 7
Record format . . . : FB	
Record length . . . : 80	
Block size : 6160	Current Utilization
1st extent blocks . . : 100	Used cylinders : 151
Secondary blocks . . : 9	Used extents : 7
Creation date . . . : 1992/12/04	
Referenced date . . :	
Expiration date . . : ***None***	
Command ==>	
F1=Help	F2=Split
F9=Swap	F12=Cancel
F3=Exit	F7=Backward
F8=Forward	

Figure 55. Short Data Set Information (ISRUAIP)

The **Allocated units** and **Used units** fields can vary, depending on the value that was specified in the **Space units** field when you allocated the data set. For example, Figure 55 shows what the short format of the Data Set Information panel would look like if the data set was allocated by specifying CYLS in the **Space units** field.

Short Information for Managed Data Sets: The Library Utility option S displays information (Figure 56) for data sets that reside on Storage Management Subsystem volumes (also called managed data sets) when:

- Data Facility Product (DFP) Version 3 Release 2 or above is installed and available
- Storage Management Subsystem is active.

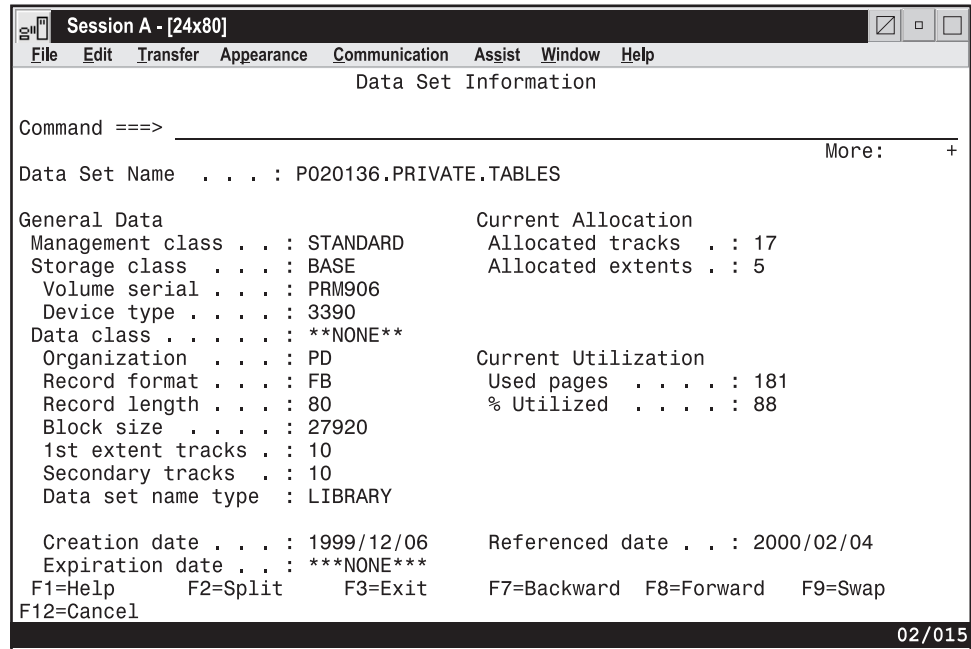


Figure 56. Data Set Information (Short) for Managed Data Sets (ISRUAISE)

The major difference between this information and the information that is displayed for data sets on non-managed volumes is the addition of the following classes:

- Management class
- Storage class
- Data class.

If the data set is a PDSE, the **Data set name type** field is LIBRARY. Because the used blocks and used extents are not applicable to a PDSE, the Data Set Information panel replaces these values with **Used pages** and **% Utilized** (Figure 57 on page 92). Other values that can appear in the **Data set name type** field are:

- HFS - MVS Hierarchical File System data set
- EXTENDED - DFP Striped data set. When the Data Set Name Type is EXTENDED, the **SMS Compressible** field indicates if the data set is compressible or not (YES or NO).

Library Utility (Option 3.1)

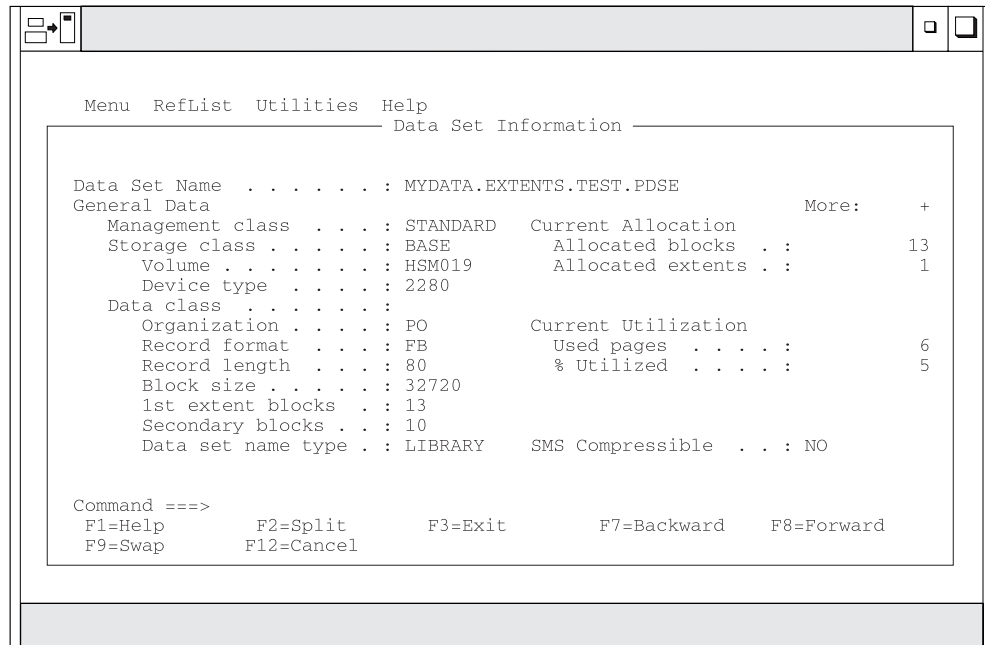


Figure 57. Data Set Information (Short) for a PDSE (ISRUAISE)

Library Utility Options for Members

The following sections describe the options shown on the right side of the Library Utility panel shown in Figure 47 on page 81. These options are used to work with members.

Notes:

1. You can *chain* these commands; that is, you can select multiple members from a member list for various processing tasks. Use the CANCEL command (from a View, Browse, or Edit session) to break the chain and return to the member list.
2. With an enhanced member list, you can enter other commands. See "M — Display Member List" on page 143.

B — Browse Member

If you select option B, you must specify a partitioned data set and a member name. The specified member is displayed in Browse mode. You can use all the Browse commands. When you exit Browse, the Library Utility panel reappears.

C — Copy Member

If you select option C, the copy prompt panel appears where you must specify a partitioned data set and member name for the new member. When you exit Copy, the Library Utility panel reappears.

D — Delete Member

If you select option D, you must specify a partitioned data set and member name. Option D prevents you from deleting a PDS member that any user is currently editing.

If you have selected **Confirm Member Delete** on the Library Utility panel (ISRUDA1), then you are asked to confirm your intention to delete this member.

E — Edit Member

If you select option E, you must specify a partitioned data set and member name. The specified member is displayed in Edit mode. You can use all EDIT commands. When you exit Edit, the Library Utility panel reappears.

G — Reset Member

If you select option G, the reset prompt panel displays, where you enter the data set and member name. When you exit, the Library Utility panel reappears.

M — Move Member

If you select option M, the move prompt panel displays, where you enter the data set and member name. When you exit, the Library Utility panel reappears.

P — Print Member

If you select option P, you must specify a partitioned data set and a member name. A source listing of the member is recorded in the ISPF list data set.

Note: If any members are to be printed, the data set characteristics must conform to those for the L option.

R — Rename Member

If you select option R, you must specify a partitioned data set and member name. You must also specify a new member name in the **New name** field. Option R prevents you from renaming a member currently being edited by you or another user.

T — TSO Command for Member

If you select option T, the TSO command prompt panel appears, where you can enter the TSO command to be run for the member.

V — View Member

If you select option V, you must specify a partitioned data set and member name. The specified member is displayed in View mode. You can use all EDIT commands. When you exit View, the Library Utility panel reappears. See the *View (Option 1)* chapter of the *ISPF User's Guide Volume I* for additional information.

W — WS Command for Member

If you select option W, the WS command prompt panel appears, where you can enter the WS command to be run for the member.

Data Set Utility (Option 3.2)

When you select this option, a panel is displayed (Figure 58 on page 94) that allows you to specify a data set and an action to be performed.

Data Set Utility (Option 3.2)

```
Session A - [24x80]
File Edit Transfer Appearance Communication Assist Window Help
Menu RefList Utilities Help

Data Set Utility

Option ==>

A Allocate new data set
R Rename entire data set
D Delete entire data set
blank Data set information
C Catalog data set
U Uncatalog data set
S Short data set information
V VSAM Utilities

ISPF Library:
Project . . .
Group . . .
Type . . .

Other Partitioned, Sequential or VSAM Data Set:
Data Set Name . . . PRIVATE.TABLES
Volume Serial . . . (If not cataloged, required for option "C")

Data Set Password . . (If password protected)

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F10=Actions F12=Cancel

04/014
```

Figure 58. Data Set Utility Panel (ISRUDA2S)

Data Set Utility Panel Action Bar

The Data Set Utility panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

RefList See the *Using Personal Data Set Lists and Library Lists* chapter of the *ISPF User's Guide Volume I* for information on referral lists.

RefMode See the **Personal List Modes** section of the *Using Personal Data Set Lists and Library Lists* chapter of the *ISPF User's Guide Volume I* for information on referral list modes.

Utilities See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help The Help pull-down offers you the following choices:

- 1 Allocating a new partitioned or sequential Data Set
- 2 Renaming an entire Data Set
- 3 Deleting an entire Data Set
- 4 Displaying Data Set information
- 5 Cataloging a Data Set
- 6 Uncataloging a Data Set
- 7 VSAM Utilities
- 8 Appendices
- 9 Index

Data Set Utility Panel Fields

All the fields on the Data Set Utility panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*. For option A you can specify any DASD-resident sequential or partitioned data set. For the other options, you can specify any DASD-resident data set that is not VSAM. You can get short information on a VSAM data set.

Data Set Utility Options

The following sections describe the options shown on the Data Set Utility panel.

A — Allocate New Data Set

Use option A to allocate a new data set with or without the Storage Management Subsystem classes (management class, storage class, and data class). A data set that is allocated on a volume that is managed by the Storage Management Subsystem(SMS) is called a *managed* data set. A data set that is allocated on a volume that is *not* managed by the SMS is called a *non-managed* data set.

To use option A you must do the following:

1. Enter one of the following:
 - An ISPF library name in the **Project, Group, and Type** fields
 - Another partitioned or sequential data set name in the **Data Set Name** field.
See the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* if you need help entering the ISPF library name or the data set name.
2. If you entered an ISPF library name, the value in the **Volume Serial** field is ignored. However, if you entered another data set name, you can specify the volume on which to allocate the data set in the **Volume Serial** field. You should not enter a volume serial if you want to do one of the following:
 - Use the authorized default volume.
 - Enter a generic unit address in the **Generic unit** field on the Allocate New Data Set panel.

See the **Volume Serials** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about volume serials.

3. If your ISPF libraries and data sets are password-protected, enter the password in the **Data Set Password** field. See the **Data Set Passwords** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about data set passwords.

Note: You cannot assign a password to a managed data set. Therefore, the Data Set Password field is ignored when you allocate a managed data set.

4. Press Enter.

A panel appears to enable you to specify data set allocation values. The panel that appears depends upon the ALLOWED_ALLOCATION_UNITS keyword value in the ISPF configuration table. When ALLOWED_ALLOCATION_UNITS is not 'A' the panel shown in this figure appears (Figure 59 on page 96).

Data Set Utility (Option 3.2)

The screenshot shows the ISRUAAP2 panel for allocating a new data set. The title bar includes icons for window control and a menu. The menu bar contains: File, Edit, Transfer, Appearance, Communication, Assist, Window, Help. Below the menu bar is a sub-menu bar: Menu, RefList, Utilities, Help. The main area is titled 'ISRUAAP2 Allocate New Data Set' with a 'More: +' button. The 'Data Set Name' is 'P020136.WILLY'. The following fields are listed with their current values and help text: Management class (blank), Storage class (blank), Volume serial (MVS0Y1), Data class (blank), Space units (blank), Average record unit (blank), Primary quantity (blank), Secondary quantity (blank), Directory blocks (blank), Record format (blank), Record length (blank), Block size (blank), and Data set name type (blank). The help text for these fields includes: (Blank for default management class), (Blank for default storage class), (Blank for system default volume), (Blank for default data class), (BLKS, TRKS, CYLS, KB, MB, BYTES or RECORDS), (M, K, or U), (In above units), (In above units), (Zero for sequential data set) *, (LIBRARY, PDS, or blank) *, (YY/MM/DD in Julian form). At the bottom, the 'Command ==>' field is empty, and the function key shortcuts are: F1=Help, F3=Exit, F10=Actions, F12=Cancel.

```
File Edit Transfer Appearance Communication Assist Window Help
Menu RefList Utilities Help

ISRUAAP2 Allocate New Data Set More: +

Data Set Name . . . : P020136.WILLY

Management class . . . (Blank for default management class)
Storage class . . . (Blank for default storage class)
Volume serial . . . MVS0Y1 (Blank for system default volume)
Data class . . . (Blank for default data class)
Space units . . . (BLKS, TRKS, CYLS, KB, MB, BYTES or RECORDS)
Average record unit (M, K, or U)
Primary quantity . . (In above units)
Secondary quantity (In above units)
Directory blocks . . (Zero for sequential data set) *
Record format . . .
Record length . . .
Block size . . .
Data set name type : (LIBRARY, PDS, or blank) *
Expiration date . . . (YY/MM/DD in Julian form)

Command ==>
F1=Help F3=Exit F10=Actions F12=Cancel
```

Figure 59. Allocate New Data Set Panel (ISRUAAP2)

Otherwise, this panel appears: (Figure 60).

The screenshot shows the ISRUAAASE panel for allocating a new data set. The title bar includes icons for window control and a menu. The menu bar contains: File, Edit, Transfer, Appearance, Communication, Assist, Window, Help. Below the menu bar is a sub-menu bar: Menu, RefList, Utilities, Help. The main area is titled 'ISRUAAASE Allocate New Data Set' with a 'More: +' button. The 'Data Set Name' is 'P020136.WILLY'. The following fields are listed with their current values and help text: Management class (blank), Storage class (blank), Volume serial (MVS0Y1), Device type (blank), Data class (blank), Space units (blank), Average record unit (blank), Primary quantity (blank), Secondary quantity (blank), Directory blocks (blank), Record format (blank), Record length (blank), Block size (blank), and Data set name type (blank). The help text for these fields includes: (Blank for default management class), (Blank for default storage class), (Blank for system default volume) **, (Generic unit or device address) **, (Blank for default data class), (BLKS, TRKS, CYLS, KB, MB, BYTES or RECORDS), (M, K, or U), (In above units), (In above units), (Zero for sequential data set) *, (LIBRARY, PDS, or blank) *, (YY/MM/DD, YYYY/MM/DD). At the bottom, the 'Command ==>' field is empty, and the function key shortcuts are: F1=Help, F3=Exit, F10=Actions, F12=Cancel.

```
File Edit Transfer Appearance Communication Assist Window Help
Menu RefList Utilities Help

ISRUAAASE Allocate New Data Set More: +

Data Set Name . . . : P020136.WILLY

Management class . . . (Blank for default management class)
Storage class . . . (Blank for default storage class)
Volume serial . . . MVS0Y1 (Blank for system default volume) **
Device type . . . (Generic unit or device address) **
Data class . . . (Blank for default data class)
Space units . . . (BLKS, TRKS, CYLS, KB, MB, BYTES or RECORDS)
Average record unit (M, K, or U)
Primary quantity . . (In above units)
Secondary quantity (In above units)
Directory blocks . . (Zero for sequential data set) *
Record format . . .
Record length . . .
Block size . . .
Data set name type : (LIBRARY, PDS, or blank) *
(YY/MM/DD, YYYY/MM/DD)

Command ==>
F1=Help F3=Exit F10=Actions F12=Cancel
```

Figure 60. Allocate New Data Set —Managed Data Set Support Panel (ISRUAAASE)

When you press Enter with this panel displayed, the new data set is allocated and cataloged. Entering the END command returns you to the previous panel without allocating the data set.

An optional installation exit, the data set allocation exit, can control all data set creation, deletion, allocation, and deactivation done directly by ISPF. This does not include allocations done by ISPF, the TSO ALLOCATE command, or other TSO commands. Refer to *ISPF Planning and Customizing* for more information about the data set allocation exit.

Your installation must use the Data Facility Product (DFP) or DFSMS to define the values that you enter in the **Management class**, **Storage class**, and **Data class** fields. If you have no specific requirements, you can leave these fields blank. However, you should be aware that your installation may provide default

management, storage, and data classes. These defaults would take effect if you leave any of the class fields blank and may even override any classes that you specify.

Management class

Used to obtain data management-related information (migration, backup, and retention criteria, such as expiration date) for the data set allocation.

If you have no specific management class requirements, you can leave this field blank. However, you should be aware that your installation may provide a default management class. This default may even override any management class that you specify.

Storage class

Used to obtain the storage-related information (volume serial) for the data set allocation. Any volume serial that you enter in the **Volume serial** field is ignored unless the storage class that you use includes the Guaranteed Space=Yes attribute (useful if you are allocating multivolume data sets).

Data class

Used to obtain the data-related information (space units, primary quantity, secondary quantity, directory block, record format, record length, and data set name type) for the allocation of the data set.

Default values are provided for the fields in Figure 59 on page 96, except for expiration date, based on which of the following occurred most recently:

- What you last entered on this panel
- The last display data set information request (options 3.1, 3.2, or 3.4).

You can type over the displayed defaults if you want to change them. The following is a list of the fields on this panel and their definitions:

Volume serial

This field is one that you probably will not need to use very often. It is not required and is usually ignored by the Storage Management Subsystem. You should not enter a volume serial if you want to do one of the following:

- Use the authorized default volume.
- Enter a generic unit address in the **Generic unit** field.
- Use the volume specified by the storage class you are using.

When a storage class is used, your installation and the SMS assume joint responsibility for determining the volume on which the data set is allocated. The SMS enables the installation to select the volumes that are eligible to contain the data set. It then chooses one of those volumes and allocates the data set. The SMS's volume choice is based on:

- storage requirements
- the amount of space a volume has available.

Note: ISPF does not support tape data sets.

Generic unit

The generic unit address for the direct access volume that is to contain the data set, such as 3380, 3390, and so forth. This field overrides the **Volume Serial** field on the Data Set Utility panel. Therefore, you should leave this field blank if you want to do one of the following:

- Use the authorized default volume
- Enter a volume serial in the **Volume serial** field.

Data Set Utility (Option 3.2)

Notes:

1. Leave both the **Volume serial** and **Generic unit** fields blank to allow ISPF to select an eligible volume. Eligibility is determined by the unit information in your user entry in the TSO User Attribute Data Set (UADS) or the TSO segment of RACF.
2. At some installations, you are limited to eligible volumes even when an explicit volume serial is specified. At other installations you can specify any mounted volume. This is an installation option.
3. To allocate a data set to a 3850 virtual volume, you must also have MOUNT authority, gained by using the TSO ACCOUNT command or by using the RACF PERMIT command for the TSO AUTH general resource class.
4. If you are allocating an SMS data set, you can enter either an installation defined group name or a generic device type in the Generic unit field, but not a specific device number.

Space units

Any of the following:

Track Shows that the amounts entered in the primary and secondary quantity fields are expressed in tracks.

Cylinder

Shows that the amounts entered in the primary and secondary quantity fields are expressed in cylinders.

Block Shows that the amounts entered in the primary and secondary quantity fields are expressed in blocks.

Megabyte

Shows that the amounts entered in the primary and secondary quantity fields are expressed in megabytes.

Kilobyte

Shows that the amounts entered in the primary and secondary quantity fields are expressed in kilobytes.

Byte Shows that the amounts entered in the primary and secondary quantity fields are expressed in bytes.

Records

Shows that the amounts entered in the primary and secondary quantity fields are the average number of records of the size specified by the block size field.

Note: **Space units** allows the shortest unique abbreviation for each attribute; for example, T for TRKS, C for CYLS, K for KB, and M for MB, BY for BYTE, R for RECORDS, and BL for BLKS.

Average record unit

Shows the unit used when allocating average record length. **U** specifies single-record units (bytes). **K** specifies thousand-record units (kilobytes). **M** specifies million-record units (megabytes). The default value is U.

Primary quantity

The primary allocation quantity in tracks, cylinders, blocks, megabytes, kilobytes, bytes, or records, as shown in the **Space units** field. This number can be zero for sequential data sets, but must be greater than zero for PDSs. Also, if the primary quantity is zero, the secondary quantity must be greater than zero.

Secondary quantity

The secondary allocation quantity in tracks, cylinders, blocks, megabytes, kilobytes, bytes, or records, as shown in the **Space units** field. This quantity is allocated when the primary quantity is insufficient.

Directory blocks

Enter one of the following:

- For partitioned data sets, you must specify the number of directory blocks. Each 256-byte block accommodates the following number of directory entries:
 - Data sets with ISPF statistics: 6
 - Data sets without ISPF statistics: 21
 - Load module data sets: 4–7, depending on attributes
- For sequential data sets, set this field to zero.

Record format

Any valid combination of the following codes:

- F** Fixed-length records.
- V** Variable-length records.
- U** Undefined format records.
- B** Blocked records.
- A** ASA printer control characters.
- M** Machine code printer control characters.
- S** Standard (for F) or spanned (for V); use only with sequential data sets.
- T** Track-overflow feature.

Notes:

1. You must enter either F, V, or U.
2. You can specify S and T, but ISPF does not otherwise support them.

Record length

The logical record length, in bytes, of the records to be stored in the data set.

Block size

The block size, also called *physical record length*, of the blocks to be stored in the data set. Use this field to specify how many bytes of data to put into each block, based on the record length. For example, if the record length is 80 and the block size is 3120, 39 records can be placed in each block.

Note: The record length and block size are verified to be consistent with the record format, as defined in *OS/VS2 MVS Data Management Services Guide*. If you need to use non-standard characteristics, use the TSO ALLOCATE command.

Expiration date

Allows you to protect valuable data by specifying a date, in your national language, when the data set may be deleted. If you try to delete an unexpired data set, ISPF displays two panels: a Confirm Delete panel, followed by a Confirm Purge panel. See “D — Delete Entire Data Set” on page 106 for more information about deleting unexpired data sets.

An expiration date is not required, but if you enter one it should be in one of the following formats:

YY/MM/DD, YYYY/MM/DD

Date shown in year, month, and day, or your equivalent national format. The maximum expiration date allowed is:

Data Set Utility (Option 3.2)

- 99/12/31 for a 2-digit year
- 2155/12/31 for a 4-digit year.

YY.DDD, YYYY.DDD

Date shown in Julian format, such as 86.045 for February 14, 1986.
The maximum expiration date allowed is:

- 99.365 for a 2-digit year
- 2155.365 for a 4-digit year.

You can specify a DDD value of up to 366 if the YY or YYYY value represents a leap year.

DDDD

The number of days, starting with the creation date, after which the data set can be deleted. DDDD has a range of 0 to 9999.

PERM, NOLIMIT, NEVER, 9999

Specifying any of the above values causes ISPF to translate it into a value of **1999.365**. This is treated by ISPF as permanent retention.

Note: When specifying an expiration date beyond 99/12/31, you must use the 4 character year format. For example, specify 2000/06/21 instead of 00/06/21.

Allocate Multiple Volumes

Allows you to allocate sequential data sets that span multiple volumes. ISPF supports a maximum of 59 volumes. Place a slash in this field and press enter to display a panel similar to the one shown in Figure 61.

File Edit Transfer Appearance Communication Assist Window Help

Menu RefList Utilities Help

Multivolume Allocation

Enter the number of volumes to allocate or the names of one or more volumes and press Enter to allocate or enter Cancel command to exit. If a number is entered, any volume names will be ignored.

Number of volumes to allocate: More: +

Volume names:

1. MVS0Y1 2. 3. 4.

5. 6. 7. 8.

Command ==>

F1=Help F3=Exit F12=Cancel

More: -

S, KB, MB, BYTES

tial data set) *

DS, or blank) *

MM/DD

D in Julian form ion period in days

(* Specifying LIBRARY may override zero directory block)

(** Only one of these fields may be specified)

Command==>

F1=Help F3=Exit F10=Actions F12=Cancel

Figure 61. Multivolume Allocation Panel (ISRUAMV)

This panel allows you to specify up to 59 volumes. Note the following:

- Although the volume input fields are numbered consecutively, you may enter volume names in any of the fields.
- The volume that you enter in the **Volume serial** field on the Allocate New Data Set panel will be placed in the first field of the Multivolume Allocation panel.
- If you enter only one volume, standard data set allocation is invoked.

- If you enter a number in the **Number of volumes to allocate** field, any volume names left in the name fields are ignored, and might or might not be the volumes the data set is allocated to.
- When displaying information about a multivolume data set, depending on your system setup, all volumes might not be shown until they have been accessed.

Allocation Errors

ISPF attempts to recognize inconsistent attributes for partitioned and sequential data sets before allocating them. However, the Allocation Error panel (Figure 62) appears when conditions that ISPF has no control over allow the allocation of such a data set. These conditions are caused by:

- A data class that specifies inconsistent attributes
- Attributes entered on the Allocate New Data Set panel that create inconsistency by overriding other attributes specified by the data class.

```

----- Allocation Error -----
Data Set Name: SYSTEM.LOAD

Specified data set has zero block size

The data set allocated contains inconsistent attributes as indicated by
the message displayed above. Prior to allocating a managed data set,
PDF cannot always determine if the attributes are inconsistent. The
data class used when allocating the data set may contain inconsistent
attributes, or the attributes you specified on the allocation panel may
conflict with those defined in the data class. This panel gives you the
opportunity to delete this data set. If you keep the data set, other
PDF functions, such as edit, move, copy, or promote, may not be able to
use the data set.

Instructions:

Press the Enter key to DELETE the data set.

Enter the END command to KEEP the data set.

Command ==> _____
F1=Help   F2=Split   F3=Exit   F9=Swap   F12=Cancel
  
```

Figure 62. Allocation Error Panel (ISRUADCS)

For information about allocation errors and how they affect data set promotion when using SCLM, refer to *ISPF Software Configuration and Library Manager (SCLM) Project Manager's and Developer's Guide*

The term *inconsistent attributes* refers to incompatible values that have been specified for one or more of the following:

- Space units
- Primary quantity
- Secondary quantity
- Directory blocks
- Record format
- Record length
- Block size.

Data Set Utility (Option 3.2)

For example, if you allocate a data set with an undefined record format (RECFM=U) and a block size of zero (BLOCKSIZE=0), certain ISPF functions and services cannot use the data set. These functions and services include:

- Move and copy functions
- LMMOVE, LMCOPY, and LMINIT services.

However, when either the linkage editor or the IEBCOPY utility has been called, these functions and services determine the best block size for the data set. Then, when the data set has a block size greater than zero, the ISPF functions and services listed above can be used.

The Allocation Error panel gives you the opportunity to delete such a data set because other ISPF functions, such as View (option 1) and Edit (option 2), may not be able to use it.

The sample panel (Figure 62 on page 101) shows this error message example:
Specified data set has zero block size

Press Enter to delete the data set or enter the END command to keep the data set.

C — Catalog Data Set

If you select option C, the specified data set is cataloged. For this option, you must specify the volume serial on which the data set resides, regardless of whether the data set is specified as project, library, and type, or as another data set name. The data set must reside on the specified volume.

The preceding instructions for cataloging data sets do not apply to data sets that reside on Storage Management Subsystem volumes. These data sets are automatically cataloged when you allocate them. They cannot be cataloged by using option C.

R — Rename Entire Data Set

If you select option R, a panel appears to allow you to enter the new data set name (Figure 63 on page 103).

```

Menu  RefList  Utilities  Help
-
  Rename Data Set

  Data Set Name: USERID.MYPANEL
  Volume:       HSM022

  b  Enter new name below:      (The data set will be recataloged.)

  ISPF Library:
  I   Project. . . V$IEWEN_
     Group. . . . PRIVATE_
     Type . . . . PANELS_

  Other Partitioned or Sequential Data Set:
  O   Data Set Name . . . MYPANEL_____

  Command ==> _____
     F1=Help   F2=Split   F3=Exit   F9=Swap   F12=Cancel

  D

  Option ==> R
     F1=Help   F2=Split   F3=Exit   F7=Backward F8=Forward F9=Swap
     F10=Actions F12=Cancel

```

Figure 63. Rename Data Set Panel (ISRUARP1)

Type the new data set name and press Enter to rename, or enter the END command to cancel. Either action returns you to the previous panel.

If you specify a volume serial for a data set to be renamed, ISPF checks to see whether the data set is cataloged on that volume. If it is, the Rename panel prompts you to specify whether to recatalog the data set. The displayed default for that field is YES. If you specify a volume serial and the data set is not cataloged, it remains uncataloged after you rename it. If a volume serial is not specified, the data set is recataloged to the new data set name and the old data set name is uncataloged.

Notes:

1. ISPF does not rename VSAM data sets or password-indicated data sets.
2. A volume serial is not allowed for multivolume data sets using Rename.

Renaming GDG Data Sets: Generation Data Group (GDG) data sets can only be renamed to something other than GDG names. Trying to rename GDG data sets to a different generation or version number can cause deletion of your GDG data set or group of GDG data sets.

Renaming Managed Data Sets: When you rename a data set that resides on a Storage Management Subsystem volume, you cannot specify a volume serial in the **Volume Serial** field. Both the cataloged entry and the VTOC entry are renamed.

Rename Processing with RACF: The normal order of processing when ISPF is asked to rename a data set is as follows:

1. The new data set name is cataloged using SVC 26
2. The data set is renamed using SVC 30
3. The old data set name is uncataloged using SVC 26

There are three occasions, however, when ISPF will deviate from this order of processing:

Data Set Utility (Option 3.2)

- If the data set is a System Managed (SMS) data set, the update of the catalog (both cataloging the new name and uncataloging the old name) is handled by the operating system when the SVC 30 is issued. In this case, ISPF does not issue either of the SVC 26 requests.
- If the data set is an uncataloged data set, no catalog update will be done. The data set is renamed using the SVC 30 only.
- If the data set is cataloged, but the user specified both the data set name and volume, panel ISRUARP2 is displayed. The user has the option of specifying whether the catalog processing should be done. If the user indicates (via a NO in the **Reply to uncatalog the data set** field) that no catalog processing should be done, only the SVC 30 is used to rename the data set. If the reply is YES, the SVC 30 as well as both SVC 26 requests are issued.

If an error is encountered during a rename request, an attempt is made to return the data set to its original name, and to reset the catalog entries to their original status (remove the new name from the catalog and leave the old name in the catalog).

The above order of processing is being used to minimize the possibility that an uncataloged data set will result if an error is encountered during the rename process. Errors may be encountered due to certain combinations of RACF data set profiles and user access to the group(s) under which those data set profiles fall. When an error occurs, the user receives a message indicating the status of the data set name, and of the catalog entries.

Refer to the *RACF Security Administrators Guide* or equivalent documentation for your security package, to determine the authorization levels required for each of these operations. The user will require authorization to first catalog the new data set name, then rename the data set, and then uncatalog the old data set name. This will require adequate authorization to any discrete and/or generic data set profiles involved and to the catalog(s) involved. Be aware that a discrete data set profile is renamed when the data set is renamed.

Renaming with Expiration Dates: If the data set has an expiration date in its catalog entry, the expiration date is not propagated forward to the new catalog entry. The new catalog entry must be updated manually to specify the new expiration date. Use the TSO ALTER command or a similar function to do this.

If you select this option, a panel appears to remind you of the situation (Figure 64 on page 105).

Confirm Rename

Warning: The data set being renamed contains an expiration date in its catalog entry. The expiration date will not be carried forward to the new catalog entry. The expiration date can be set by using the TSO ALTER command.

Data set name . . : KEENE,EXPDATE
Expiration date . : 2002/05/03

Instructions:

Press ENTER key to confirm uncatalog request.
Enter END command to cancel uncatalog request

Command ==> _____
F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Figure 64. Rename Data Set Panel (ISRUARC1)

As directed by the panel, do one of the following:

- Press enter to confirm the rename request
- Enter the END command to cancel the rename request

U — Uncatalog Data Set

If you select option U, the specified data set name is uncataloged. There is no need for the specified data set to be allocated or for the volume on which it resides to be mounted. If the catalog entry being removed contains an expiration date, the following confirmation panel is displayed:

Confirm Uncatalog

CAUTION:
The catalog entry being deleted has an expiration date which has not expired

Data set name...: KEENE,EXPDATE
Expiration date.: 2002/05/03

Instructions:

Press ENTER key to confirm uncatalog request.
Enter END command to cancel uncatalog request

Command ==> _____
F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Figure 65. Uncatalog Data Set Panel (ISRUACC1)

As directed on the panel, do one of the following:

- Press enter to confirm uncatalog request
- Enter the END command to cancel the uncatalog request

Data Set Utility (Option 3.2)

Note: Uncatalog is not allowed for multivolume data sets.

You cannot use option U to uncatalog a data set that resides on a Storage Management Subsystem volume. However, the system uncatalogs these data sets when you delete them, which is done by using option D of either the Data Set utility (option 3.2) or the Data Set List utility (option 3.4).

D — Delete Entire Data Set

If you select option D, a confirmation panel is displayed (Figure 66) so you can make sure you did not select this option by mistake.

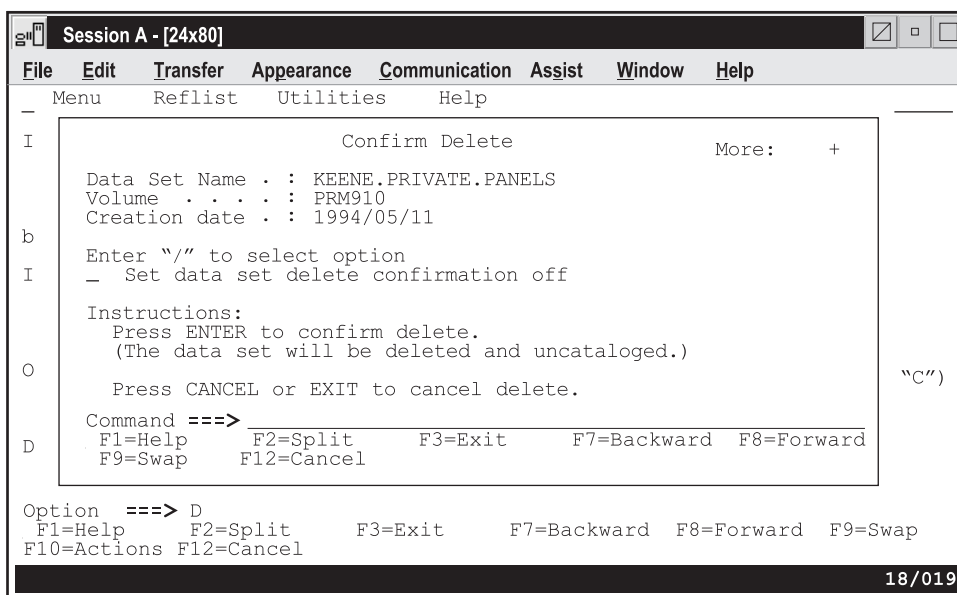


Figure 66. Confirm Delete Panel (ISRUADC1)

If you specify a volume serial for the data set to be deleted, ISPF checks to see whether the data set is cataloged on that volume. If so, the Confirm Delete panel prompts you to specify whether to uncatalog the data set. The displayed default is YES. If no volume serial is specified, and the data set does not have an expiration date, the data set is deleted and uncataloged.

Notes:

1. ISPF does not delete password-protected data sets or data sets allocated with an esoteric device type.
2. A volume serial is not allowed for multivolume data sets using Delete.

As directed on the panel, do one of the following:

- Press Enter to confirm the data set deletion.
- Enter the CANCEL or EXIT command to cancel. This action returns you to the previous panel.

If the data set has an expiration date that has not expired, ISPF displays a Confirm Purge panel (Figure 67 on page 107) after the Confirm Delete panel.

Menu Reflist Utilities Help				
Confirm Delete				
				More : +
Data Set being deleted has an expiration date which has not expired				
Data Set Name . : KEENE,EXPDATE				
Volume : T00LS3				
Creation date . : 2001/03/27				
Expiration Date : 2002/05/03				
Enter "/" to select option				
Purge Data Set				
Instructions:				
Enter "/" to confirm purge request.				
(The data set will be deleted and uncataloged.)				
Press CANCEL or EXIT to cancel the purge request.				
Command ==> _____				
F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward
F9=Swap	F12=Cancel			
F10=Actions F12=Cancel				

Figure 67. Confirm Purge Panel (ISRUADC3)

Use a slash to select Purge Data Set if you want ISPF to purge the data set. The statement that is enclosed in parentheses on the Confirm Purge panel shows whether the data set to be purged will be uncataloged.

When you delete a data set, the volume name is compared to the volume name in the configuration table. If the names match, the command specified in the configuration table is used in place of the ISPF delete processing. This lets you delete migrated data sets without first causing them to be recalled.

Delete Processing with RACF: If the data set is an SMS data set, it is deleted using SVC 29. The update of the catalog entry is handled by the operating system.

If the data set is not an SMS data set and either it is not cataloged or the user indicates on panel ISRUADC2 (panel ISRUADC2 is shown if the volume is supplied) that it is not to be uncataloged, it is deleted using SVC 29.

If the data set is not an SMS data set and it is cataloged and/or the user indicates on panel ISRUADC2 (panel ISRUADC2 is shown if the volume is supplied) that it is to be uncataloged, the following process is followed.

1. The data set is deleted using SVC 29 (SCRATCH).
2. The data set is uncataloged using SVC 26.

This order of processing is being used to minimize the possibility of encountering errors which result in uncataloged data sets. Some combinations of RACF generic and discrete data set profiles and user access to the group(s) under which those profiles fall can cause this process to fail. If an error is encountered in this process the user is notified via a message of the status of the data set and catalog entries.

Refer to the *RACF Security Administrators Guide* or equivalent documentation for your security package, to determine the authorization levels required for each of these operations. The user will require authorization to first delete the data set and then uncatalog the data set name. This will require adequate authorization to any discrete and/or generic data set profiles involved and to the catalog(s) involved. Be aware that a discrete data set profile is deleted when the data set is deleted.

Data Set Utility (Option 3.2)

S — Data Set Information (Short)

If you select option S, information about the selected data set is displayed. The information displayed by option S is the same information displayed by option S on the Library Utility panel (option 3.1). See “S — Short Data Set Information” on page 89 for more information and Figure 55 on page 90 for an example. To return to the previous panel, press Enter or enter the END command.

The space for data sets allocated in blocks is calculated as if all of the tracks, including the last one, contain only full blocks of data. Any partial “short” blocks are ignored.

Note: The information shown for the current space utilization is the actual data that the data set contains, based on the number of allocation units (blocks, tracks, bytes, megabytes, and so on) that have been written. For a data set allocated in units other than tracks and cylinders, it does not include the unused portion of a track that is only partially filled. For example, if a data set allocated in bytes with blocksize of 600 has one block written to a device with a track size of 1000, 600 bytes of data are written and the remaining 400 bytes cannot be used by a different data set. A track is the smallest possible unit of physical allocation to a data set on DASD. ISPF reports 600 bytes used while other products (such as ISMF) report 1000 bytes used. ISPF reports the space occupied by data in the data set. ISMF reports the space used by this data set that is not available for use by another data set. The difference is a relative indication of the effectiveness of the block size used when the data set was created.

See “Short Information for Managed Data Sets” on page 91 to learn more about the data set information that is displayed for managed data sets.

Blank — (Data Set Information)

If you leave the **Option** field blank, information about the selected data set is displayed. The information displayed is the same information displayed by option I on the Library Utility panel (option 3.1). See “I — Data Set Information” on page 85 for more information and “U — Uncatalog Data Set” on page 105 for an example. To return to the previous panel, press Enter or enter the END command.

Notes:

1. For multivolume data sets, options I and S display current allocation and utilization values that represent totals from all volumes used.
2. You may not enter a volume serial when you are requesting information on a multivolume data set.

The space for data sets allocated in blocks is calculated as if all of the tracks, including the last one, contain only full blocks of data. Any partial “short” blocks are ignored.

Note: The information shown for the current space utilization is the actual data that the data set contains, based on the number of allocation units (blocks, tracks, bytes, megabytes, and so on) that have been written. For a data set allocated in units other than tracks and cylinders, it does not include the unused portion of a track that is only partially filled. For example, if a data set allocated in bytes with blocksize of 600 has one block written to a device with a track size of 1000, 600 bytes of data are written and the remaining 400 bytes cannot be used by a different data set. A track is the smallest possible unit of physical allocation to a data set on DASD. ISPF reports 600 bytes used while other products (such as ISMF) report 1000 bytes used. ISPF

reports the space occupied by data in the data set. ISMF reports the space used by this data set that is not available for use by another data set. The difference is a relative indication of the effectiveness of the block size used when the data set was created.

See “Information for Managed Data Sets” on page 87 for information about the data set information that is displayed for managed data sets.

V — VSAM Utilities

Use option V to create the IDCAMS commands to define, delete, and list catalog information for VSAM data sets. Before the command is issued, you will be allowed to edit it in an ISPF Edit session. The command will process in the foreground.

Note: The VSAM utilities function builds a command that is syntactically correct; the utility does not do any compatibility checking of the fields used to build the command.

When you select option V, the panel shown in Figure 68 is displayed.

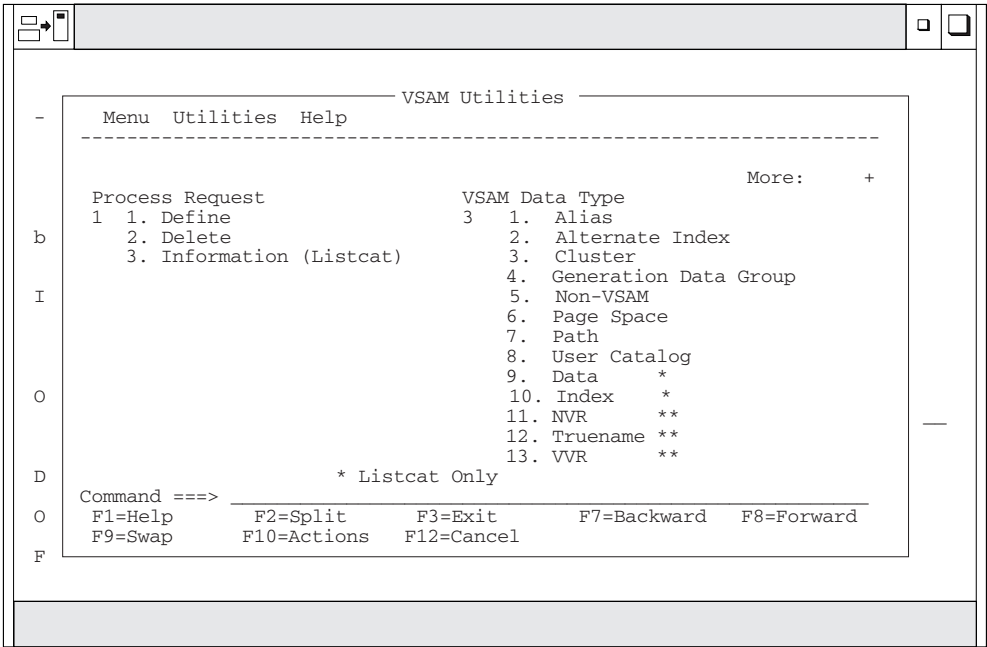


Figure 68. VSAM Utilities Panel (ISRUVSAM)

VSAM Utilities Panel Action Bar: The VSAM Utilities panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Utilities See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help The Help pull-down offers you the following choices:

- 1 VSAM Utilities
- 2 Profile Data Set
- 3 Get

Data Set Utility (Option 3.2)

- 4 Save
- 5 Change
- 6 Appendices
- 7 Index

VSAM Utilities Panel Fields: There are two fields on the VSAM Utilities panel:

Process Request

Required field. Indicates what is going to be done to the VSAM data set:

- 1 **Define.** Process an IDCAMS define request
- 2 **Delete.** Process an IDCAMS delete request against one or more data sets.
- 3 **Listcat.** Process an IDCAMS list catalog request.

VSAM Data Type

Required field. Indicates what kind of data set is to be defined, deleted or listed:

- 1 **Alias.** Define, delete, or list an alternate name for a non-VSAM data set or a user catalog
- 2 **Alternate Index.** Specify that an alternate index is to be defined, deleted, or listed or that an alternate index entry is to be recataloged
- 3 **Cluster.** Specify that a cluster is to be defined, deleted, or listed or that a cluster entry is to be recataloged
- 4 **Generation Data Group.** Specify that a generation data group entry is to be defined, deleted, or listed
- 5 **Non-Vsam.** Specify that a non-VSAM, non-SMS-managed data set is to be defined, deleted, or listed
- 6 **Page Space.** Specify that a page space is to be defined, deleted, or listed
- 7 **Path.** Specify that a path is to be defined, deleted, or listed or that a path entry is to be recataloged
- 8 **User Catalog.** Specify that a catalog is to be defined, deleted, or listed
- 9 **Data.** List data level information (Listcat request only)
- 10 **Index.** List index level information (Listcat request only)
- 11 **NVR.** Delete an SMS-managed non-VSAM volume record entry (Delete request only)
- 12 **Truename.** Delete the truename entry for a data or index component of a cluster or alternate index or the name of an alternate index (Delete request only)
- 13 **VVR.** Delete an unrelated VSAM volume record entry (Delete request only).

Example Usage – Defining a Cluster: To define a cluster, on the VSAM Utilities panel, type 1 in the **Process Request** field and 3 in the **VSAM Data Type** field. The Define Cluster panel is displayed as shown in Figure 69 on page 111.

```

Menu  Function  Utilities  Help
-----
                                Define Cluster

                                Enter "/" to select option
                                /  Edit IDCAMS command
                                /  Browse errors only

Cluster Name . . . USERID.PRIVATE.PANELS

                                Cluster Level Information:

Space Units . . . . . 1  1. Cylinders   Primary Quantity . . . 4
                        2. Tracks      Secondary Quantity . . 1
                        3. Records
                        4. Kilobytes
                        5. Megabytes

Volumes . . . . . PACK01 . . . . .

Buffer Space . . . . .
Control Interval Size . .
Data Class . . . . .
Management Class . . . .

Command ==>
F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel

```

Figure 69. Define Cluster Panel (ISRUVPC3)

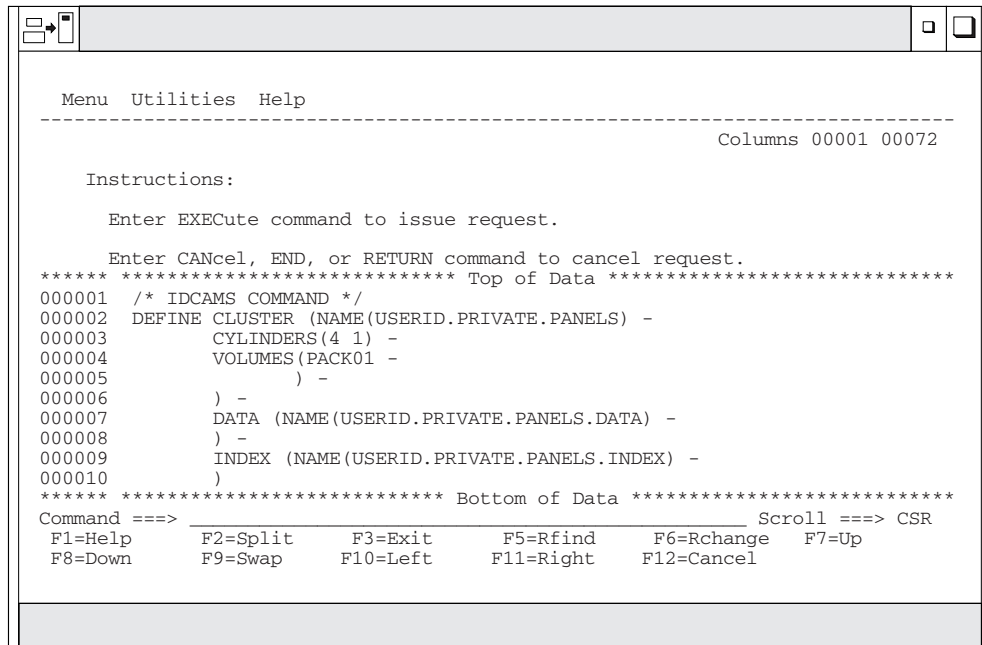
Notes:

1. Select the Edit IDCAMS command option to edit the IDCAMS command that this process generates before the command is issued. If you do not select this option, the command will be issued when you press Enter.
2. Select the Browse errors only option to browse the output from IDCAMS only when a non-zero return code is returned by IDCAMS.

Fill in the required fields or use a VSAM profile data set as described in “Building a VSAM Profile Data Set” on page 112. When you press Enter, the screen shown in Figure 70 on page 112 is displayed.

Note: If you try to use a profile that was defined for a different request type (for example, Generation Data Group), you will receive a *Type mismatch* error.

Data Set Utility (Option 3.2)



```

Menu  Utilities  Help
-----
Columns 00001 00072

Instructions:

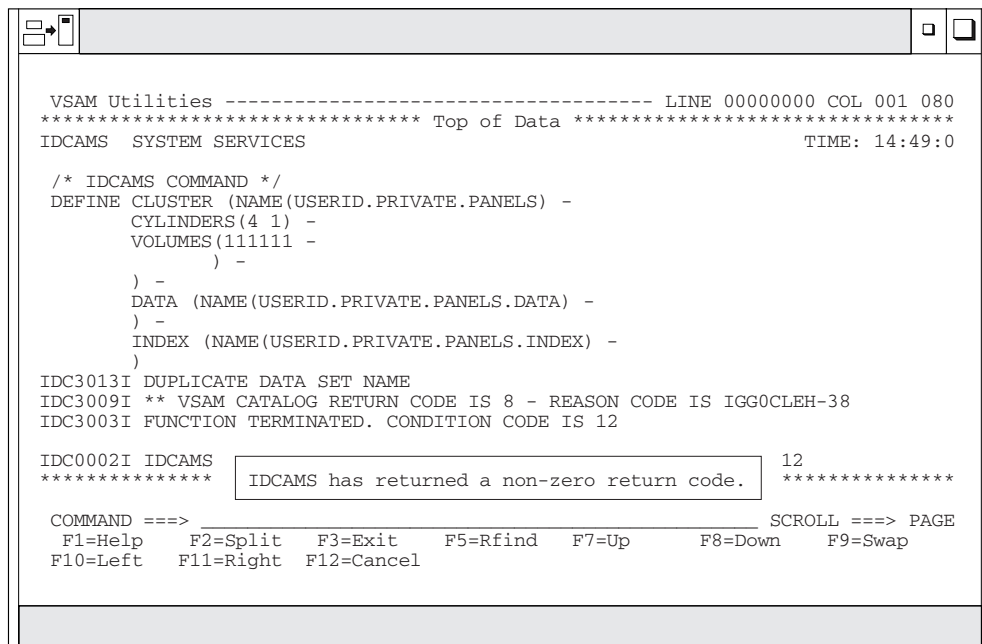
Enter EXECute command to issue request.

Enter CANCEL, END, or RETURN command to cancel request.
***** ***** Top of Data *****
000001  /* IDCAMS COMMAND */
000002  DEFINE CLUSTER (NAME(USERID.PRIVATE.PANELS) -
000003          CYLINDERS(4 1) -
000004          VOLUMES(PACK01 -
000005              ) -
000006          ) -
000007          DATA (NAME(USERID.PRIVATE.PANELS.DATA) -
000008              ) -
000009          INDEX (NAME(USERID.PRIVATE.PANELS.INDEX) -
000010              )
***** ***** Bottom of Data *****
Command ==> _____ Scroll ==> CSR
F1=Help    F2=Split    F3=Exit    F5=Rfind    F6=Rchange  F7=Up
F8=Down    F9=Swap     F10=Left   F11=Right   F12=Cancel

```

Figure 70. Editing the IDCAMS Command (ISRUVEDT)

When you are ready to process the command, type EXEC on the Command line and press Enter. If the command processes with a non-zero return code, the panel shown in Figure 71 is displayed.



```

VSAM Utilities ----- LINE 00000000 COL 001 080
***** ***** Top of Data *****
IDCAMS  SYSTEM SERVICES                                TIME: 14:49:0

/* IDCAMS COMMAND */
DEFINE CLUSTER (NAME(USERID.PRIVATE.PANELS) -
          CYLINDERS(4 1) -
          VOLUMES(111111 -
              ) -
          ) -
          DATA (NAME(USERID.PRIVATE.PANELS.DATA) -
              ) -
          INDEX (NAME(USERID.PRIVATE.PANELS.INDEX) -
              )
IDC3013I DUPLICATE DATA SET NAME
IDC3009I ** VSAM CATALOG RETURN CODE IS 8 - REASON CODE IS IGG0CLEH-38
IDC3003I FUNCTION TERMINATED. CONDITION CODE IS 12

IDC0002I IDCAMS 12
***** ***** IDCAMS has returned a non-zero return code. *****

COMMAND ==> _____ SCROLL ==> PAGE
F1=Help    F2=Split    F3=Exit    F5=Rfind    F7=Up    F8=Down    F9=Swap
F10=Left   F11=Right   F12=Cancel

```

Figure 71. Browsing IDCAMS Errors (ISRUVBRO)

Press F3 to return to the panel shown in Figure 70, make the necessary changes, and resubmit the command.

Building a VSAM Profile Data Set: You can build a VSAM profile data set, each member of which can be used to store input fields on a VSAM input panel for

Data Set Utility (Option 3.2)

later retrieval to the same panel. If you try to use a profile that was defined for a different request type (for example, Generation Data Group), you will receive a *Type mismatch* error.

When you have filled in a VSAM input panel, select the Save to Profile choice from the Functions pull-down on the input panel action bar as shown in Figure 72.

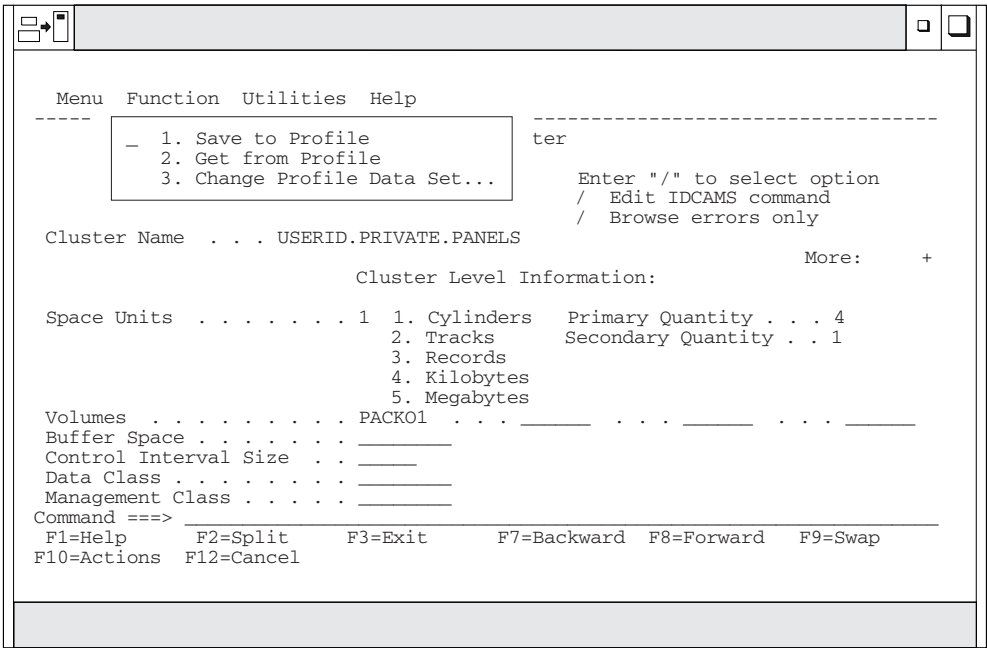


Figure 72. Functions Pull-Down on a VSAM Input Panel (ISRUVPC3)

ISPF displays a panel that allows you to assign a name to the profile data set member, as shown in Figure 73 on page 114.

Data Set Utility (Option 3.2)

```

Menu  Function  Utilities  Help
- - - - - Profile Member Name - - - - -
Menu  Utilities  Help
-----
Save Member Name  . . .
Command ==>
F1=Help          F2=Split          F3=Exit          F9=Swap          F10=Actions
F12=Cancel

Space Units  . . . . . 1  1. Cylinders    Primary Quantity . . . 4
                        2. Tracks      Secondary Quantity . . 1
                        3. Records
                        4. Kilobytes
                        5. Megabytes
Volumes      . . . . . PACK01 . . . . .
Buffer Space . . . . .
Control Interval Size . . .
Data Class . . . . .
Management Class . . . . .
Command ==> SAVE
F1=Help        F2=Split          F3=Exit          F7=Backward  F8=Forward  F9=Swap
F10=Actions    F12=Cancel

```

Figure 73. Profile Member Name Panel (ISRUVSAV)

Type in the member name. When you press Enter, the data set will be created for you (variable blocked, LRECL 203, PDS).

Using a VSAM Profile Data Set: When you have displayed a VSAM input panel, select the Get from Profile choice from the Functions pull-down on the input panel action bar to display the panel shown in Figure 74.

```

Menu  Functions  Utilities  Help
-----
GET  USERID.VSAM.PROFILE
Name  VV MM  Created      Changed      Size  Row Init  Mod  ID
. TEST1      03.00 93/11/10 93/11/10 18:16 75 75 0 USERID
. TEST2      03.00 93/11/10 93/11/10 18:16 75 75 0 USERID
**End**

Command ==>
F1=Help        F2=Split          F3=Exit          F7=Backward  F8=Forward  F9=Swap
F10=Actions    F12=Cancel

```

Figure 74. Using a VSAM Profile Data Set (ISRVMLGT)

When you select a profile and press Enter, the fields on the entry panel will fill with the values stored in the profile data set member.

Changing the VSAM Profile Data Set: To change the name of the active VSAM profile data set, select the Change Profile Data Set... choice from the Functions pull-down on an input panel action bar to display the panel shown in Figure 75.

```

Menu  Function  Utilities  Help
- - - - - Profile Data Set - - - - -
Menu  Utilities  Help
-----
Profile Data Set . . 'USERID.VSAM.PROFILE'
Command ==>
F1=Help      F2=Split      F3=Exit      F9=Swap      F10=Actions
F12=Cancel

Space Units . . . . . 1  1. Cylinders  Primary Quantity . . . 4
                        2. Track    Secondary Quantity . . 1
                        3. Records
                        4. Kilobytes
                        5. Megabytes
Volumes . . . . . PACK01 . . . . .
Buffer Space . . . . .
Control Interval Size . .
Data Class . . . . .
Management Class . . . .
Command ==> CHANGE
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel

```

Figure 75. Panel for Changing the Name of the VSAM Profile Data Set (ISRUVGET)

You may type the name of a different profile data set. When you press Enter, the data set is created if it does not exist, and this data set becomes the active profile data set.

Move/Copy Utility (Option 3.3)

When you select this option, a panel is displayed (Figure 76 on page 116) that allows you to specify the “From” data set (and member if it is partitioned) and an option to be performed. The Move/Copy Utility prevents you from moving or copying a PDS member that you or another user is currently editing.

Move/Copy Utility (Option 3.3)

```
Menu  RefList  Utilities  Help
-----
                        Move/Copy Utility
                        More:      +

C  Copy data set or member(s)          CP Copy and print
M  Move data set or member(s)          MP Move and print
L  Copy and LMF lock member(s)         LP Copy, LMF lock, and print
P  LMF Promote data set or member(s)   PP LMF Promote and print

Specify "From" Data Set below, then press Enter key

From ISPF Library:
Project . . . USERID          (--- Options C, CP, L, and LP only ---)
Group . . . PROJ              . . .
Type . . . PANELS
Member . . .                  (Blank or pattern for member list,
                              "*** for all members)

From Other Partitioned or Sequential Data Set:
Data Set Name . . .

Option ==>
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel
```

Figure 76. Move/Copy Utility Panel (ISRUMC1)

Move/Copy Utility Panel Action Bar

The Move/Copy Utility panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
RefList	See the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral lists.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers you the following choices: <ol style="list-style-type: none">1 General2 Function of the Move/Copy Utility3 How to fill in the Move/Copy panel4 Move/Copy member selection list5 Allowable Data Set characteristics6 Move/Copy rules9 Appendices10 Index

Move/Copy Utility Panel Fields

All the fields on the Move/Copy Utility panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*. On this panel, you specify the data set that you want to copy, move, lock, or promote. This is called the "From" data set.

If you request a member list or specify an asterisk (*) in the **Member** field on the "From" panel, ISPF does not display a **Member** field on the "To" panel. See the

Member Selection List Commands section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* if you need information about primary and line commands that are available for the Move/Copy utility member list display.

You can copy or move load modules stored in partitioned data sets with undefined record formats, but you cannot print them.

The deletion of any member because of a move is recorded in your ISPF log data set, if allocated.

When you complete the panel and press Enter, ISPF displays another panel that is determined by the option you selected. This panel allows you to specify the "To" or "Target" data set or controlled library. Both the "From" and "To" or "Target" data sets must already exist. If the "Target" data set does not exist the user is prompted to see if the data set should be allocated. Choices are to allocate the "Target" data set using the characteristics of the "From" data set as a model, or to allocate the new data set by specifying the characteristics for it. This function can be suppressed through the ISPF Configuration table. If it is suppressed, an allocate request for a non-existent data set fails.

Move/Copy Utility Options

The following sections describe the options shown on the Move/Copy Utility panel.

C and CP — Copying Data Sets

When you use the C and CP options, ISPF provides library concatenation support. This support allows you to specify up to four input libraries as the "From" data set. The libraries are searched from left to right as they are entered on the panel. The member to be copied, which is either specified in the **Member** field or selected from a member list, is copied from the first library in which it is found.

If you select C or CP, the panel shown in Figure 77 on page 118 is displayed. This panel allows you to specify the "To" data set—the library or data set name that you want the copied data stored under.

Note: The Move/Copy utility does not support the following:

- Supplying a volume serial when attempting to copy a multivolume data set
- Copying unmovable data sets (data set organization POU or PSU).

C — Copy Data Set or Member(s): Use option C to copy a data set. You can specify either a DASD-resident sequential or partitioned data set for both the "From" or "To" data sets. The "From" data set is not deleted.

CP — Copy and Print: Use this option as you would use option C, except source listings are recorded in the ISPF list data set, as follows:

- If the "To" data set is partitioned, a listing of each new or replaced member is recorded.
- If the "To" data set is sequential, a listing of its complete contents is recorded.

Move/Copy Utility (Option 3.3)

```
Menu  RefList  Utilities  Help
-----
COPY      From USERID.PRIVATE.PANELS

Specify "To" Data Set Below

To ISPF Library:
Project   . . . USERID
Group    . . . PRIVATE
Type     . . . PANELS

Replace option:
Enter "/" to select option
/ Replace like-named members

To Other Partitioned or Sequential Data Set:
Data Set Name . . . _____
Volume Serial . . . _____ (If not cataloged)

Data Set Password . . . _____ (If password protected)

To Data Set Options:
Sequential Disposition      Pack Option      SCLM Setting
1. Mod                      3. 1. Yes        3. 1. SCLM
2. Old                      2. No           2. 2. Non-SCLM
                          3. Default      3. 3. As is

Command ==> _____
```

Figure 77. Move/Copy Utility - "To" Panel for Copying (ISRUMC2B)

All the fields on the Move/Copy Utility "To" panels for copying data sets are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except the following To Data Set Options fields:

Sequential Disposition

If the "To" data set is sequential, enter:

- 1 To add the "From" data set to the end of the "To" data set (Mod).
- 2 To replace the "To" data set's entire contents with the contents of the "From" data set (Old).

If the "From" data set consists of several members of an ISPF library or a partitioned data set to be moved or copied to a sequential data set, the members are written to the "To" data set one after another. The "To" data set disposition (Old or Mod) controls only the beginning location of the "To" data set after the copy or move is completed.

Pack Option

To indicate how the data is to be stored in the "To" data set, enter:

- 1 If you want the data in the "To" data set to be packed.
- 2 If you do not want the data in the "To" data set to be packed.
- 3 If you want the data to be stored in the same format in the "To" data set as it is in the "From" data set.

If you are copying data to a sequential data set with disposition of MOD, you cannot mix packed and unpacked data, nor can you copy multiple packed members.

The technique used to pack data is an internal algorithm used only by ISPF. If the data is packed, attempts to access or process the data outside ISPF can cause unwanted results. Refer to the description of the PACK primary command in *ISPF Edit and Edit Macros* for more information.

SCLM Settings

The SCLM setting is a bit that ISPF uses to determine what type of edit the file last had performed upon it.

1 SCLM

This bit is ON to specify that the last edit of this file was under SCLM control.

2 Non-SCLM

This bit is ON to specify that the last edit of this file was under control of something other than SCLM.

3 As-is

This bit is ON to specify that this operation leaves the current setting unchanged.

Replace like-named PDS members

Select this option to allow replacement of a member in the “To” data set with a like-named member in the “From” data set.

M and MP — Moving Data Sets

When you use the M and MP options, ISPF does not provide library concatenation support. You can specify up to four input libraries as the “From” data set. However, only the first library in the sequence is searched. Therefore, the member to be moved, which is either specified in the Member field or selected from a member list, is moved only if it is found in the first library. However, the other three library names remain on the panel and can be used with the C and CP options.

If you select M or MP, the panel shown in Figure 78 on page 120 is displayed. This panel allows you to specify the “To” data set—the library or data set name that you want the moved data stored under.

Note: The Move/Copy utility does not support the following:

- Supplying a volume serial when attempting to copy a multivolume data set
- Copying unmovable data sets (data set organization POU or PSU).

M — Move Data Set or Member(s): Use option M to move a data set. You can specify either a DASD-resident sequential or partitioned data set for both the “From” or “To” data sets.

Option M causes data sets to be deleted after they have been successfully moved to the “To” data set, as follows:

- If the “From” data set is partitioned, the selected members are deleted from it.
- If the “From” data set is sequential, the complete “From” data set is deleted.

MP — Move and Print: Same as option M, except source listings are recorded in the ISPF list data set, as follows:

- If the “To” data set is partitioned, a listing of each new or replaced member is recorded.
- If the “To” data set is sequential, a listing of its complete contents is recorded.

Move/Copy Utility (Option 3.3)

```
Menu  RefList  Utilities  Help
-----
MOVE      From USERID.PRIVATE.PANELS

Specify "To" Data Set Below

To ISPF Library:
Project   . . . USERID
Group    . . . PRIVATE
Type     . . . PANELS

Replace option:
Enter "/" to select option
/ Replace like-named members

To Other Partitioned or Sequential Data Set:
Data Set Name . . . 
Volume Serial . . . (If not cataloged)

Data Set Password . . (If password protected)

To Data Set Options:
Sequential Disposition      Pack Option      SCLM Setting
1 1. Mod                    3 1. Yes        3 1. SCLM
2 2. Old                    2 2. No         2 2. Non-SCLM
                          3 3. Default      3 3. As is

Command ===> 
```

Figure 78. Move/Copy Utility - "To" Panel for Moving (ISRUMC2B)

All the fields on the Move/Copy Utility "To" panels for moving data sets are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except the following To Data Set Options fields:

- Sequential Disposition
- Pack Option
- SCLM Settings
- Replace like-named PDS members.

See "C and CP — Copying Data Sets" on page 117 for descriptions of these fields.

Using the Move/Copy Utility without Load Modules

Note: The following promote information applies to LMF. For information about promoting members that are not load modules with SCLM, refer to *ISPF Software Configuration and Library Manager (SCLM) Developer's and Project Manager's Guide*

For any move, copy, or promote operation that does not involve load modules, the following rules apply:

- Record formats (RECFM) and logical record lengths (LRECL) for the two data sets need not be alike. When necessary, data is truncated or padded on the right with blanks to accommodate different record lengths.
- The data to be moved or copied is not renumbered or changed in any way, except for possible truncation, padding, or packing as noted above. Printer control characters, if present, are treated as data.
- Library statistics or other user data in directory entries are not changed when moving or copying between partitioned data sets.
- Partitioned data set members with user TTRs cannot be moved, copied, or promoted.

Using the Move/Copy Utility with Load Modules

For a move or copy of load modules, the following rules apply:

Move/Copy Utility (Option 3.3)

- Both data sets must be partitioned and must have an undefined record format (RECFM=U).
- Load modules that were created for planned overlay cannot be moved or copied.
- The print option, if specified, is ignored.
- If the “To” library is LLA-managed, it must be in NOFREEZE mode.
-

For Move or Copy, reblocking can be done for load modules only, and is done by using the IEBCOPY COPYMOD function. Whether or not the load module is reblocked depends on the block sizes for the “To” and “From” data sets, as well as the value of the **USE_IEBCOPY_COPY_OR_COPYMOD_OPTION** and **WHEN_TO_USE_IEBCOPY** keyword settings in the ISPF Configuration table (see the ISPF Planning and Customizing for more information about the table).

- If the WHEN_TO_USE_IEBCOPY setting is 0, IEBCOPY is only used:
 - When copying from a data set with a larger block size to a data set with a smaller block size.
 - When a PDSE has been specified in the “From” data set concatenation or as the “To” data set.
- If the WHEN_TO_USE_IEBCOPY setting is 1, IEBCOPY is always used to copy load modules.
- If the WHEN_TO_USE_IEBCOPY setting is 2, IEBCOPY is only used when a PDSE has been specified in the “From” data set concatenation or as the “To” data set.
- If the WHEN_TO_USE_IEBCOPY setting (as described above) indicates that IEBCOPY should be used, the following rules apply when determining whether to reblock or not:
 - When the USE_IEBCOPY_COPY_OR_COPYMOD_OPTION setting is 1:
 - If the “To” and “From” block sizes are the same, no reblocking occurs. ISPF uses IEBCOPY COPY.
 - If the “To” block size is larger than the “From” block size, no reblocking occurs. ISPF uses IEBCOPY COPY.
 - If the “To” block size is smaller than the “From” block size, reblocking occurs. ISPF uses IEBCOPY COPYMOD.
 - When the USE_IEBCOPY_COPY_OR_COPYMOD_OPTION setting is 2:
 - If the “To” and “From” block sizes are the same, no reblocking occurs. ISPF uses IEBCOPY COPY.
 - If the “To” block size is larger than the “From” block size, reblocking occurs. ISPF uses IEBCOPY COPYMOD.
 - If the “To” block size is smaller than the “From” block size, reblocking occurs. ISPF uses IEBCOPY COPYMOD.
 - When the USE_IEBCOPY_COPY_OR_COPYMOD_OPTION setting is 3:
 - Reblocking occurs. ISPF uses IEBCOPY COPYMOD.
- If IEBCOPY is used to process the copy, ISPF allocates the following:

zprefix.zuser.SPFnnn.IEBCOPY	IEBCOPY SYSPRINT data set
SYSIN	IEBCOPY SYSIN data set
SYSUT3 and SYSUT4	IEBCOPY work data sets

The SYSPRINT data set is deleted upon completion of the copy if no errors are encountered. Otherwise, it is not deleted to enable you to diagnose errors. The SYSIN, SYSUT3, and SYSUT4 data sets are temporary data sets that use VIO if available, and are freed upon completion of the copy. All allocations use the value of ISPF Configuration table keyword PDF_DEFAULT_UNIT as the unit. The sizes for the SYSUT3 and SYSUT4 data sets are calculated dynamically,

Move/Copy Utility (Option 3.3)

| based on the number of members to be copied. If this is not sufficient for your
| move/copy request, these DDNAMES can be preallocated. If they are
| preallocated, ISPF does not free them on completion of the copy.

Moving or Copying Alias Entries

Alias entries can be moved or copied from one partitioned data set to another under the following conditions:

- If the "To" library is LLA-managed, it must be in NOFREEZE mode
- If ISPF is not using IEBCOPY:
 - After the move or copy is successfully completed for the main member or members, then the alias entry or entries can be copied.
 - From a member list:
 - When the main member or members are selected first, are not renamed, and are successfully moved or copied, then the alias entry or entries can be copied if they are selected without leaving the member list.
 - If the target data set is a PDSE, alias entries cannot be copied.
- If IEBCOPY is being used:
 - The method described above for copying when not using IEBCOPY will also work when using IEBCOPY. In addition, if all main members and aliases are selected at the same time they are processed by the same invocation of IEBCOPY and are copied correctly.
 - If the target data set is a PDSE, alias entries must be selected and processed together with the main member.

In all other cases for move and copy, you can select alias names, but they are not preserved as aliases in the "To" data set; that is, the members to which they refer are moved or copied, and the alias entries are stored in the "To" data set with the alias flags turned off.

Member List Processing When Using IEBCOPY

When copying load modules using the IEBCOPY interface, all selected members are processed as a group. This means that the processing does not stop on the first failure but will attempt to process all selected members before the member list is redisplayed. The Prompt field will be updated to indicate the result for each individual member.

No error message is displayed if one or more members is not processed successfully because members may have failed for different reasons. Reselecting a member and processing it individually will display a specific error message if the processing for that member fails again. The following values can appear in the prompt field:

*COPIED	Member was copied or copied/locked successfully
*MOVED	Member was moved successfully
*REPL	Member was replaced in the output library (Moved or Copied)
*NO DATA	Member was not found in the input library or BLDL error
*INUSE-I	ENQ failed on input member
*INUSE-O	ENQ failed on output member
*NO-COPY	Member was not copied successfully
*MIXED	You are attempting to mix load and non-load data
*NO-DEL	The delete step failed on a Move request

*NO-REPL	Member exists in the output library and replace not requested
*NO-LOCK	LMF lock failed on Copy/Lock request
*ALIAS	Member is a PDSE Program Object alias and cannot be copied individually. It will be copied when the main member is copied.

Data Set List Utility (Option 3.4)

When you select this option, the Data Set List Utility panel (Figure 79) is displayed. You can either display or print lists of ISPF libraries, data sets, or volume table of contents (VTOC) information.

```

Menu  RefList  RefMode  Utilities  Help

Data Set List Utility

blank Display data set list          P Print data set list
V Display VTOC information          PV Print VTOC information

Enter one or both of the parameters below:
Dsname Level . . . PDFTOOL.COMMON
Volume serial . . .

Data set list options
Initial View . . . 1  1. Volume      Enter "/" to select option
                    2. Space        / Confirm Data Set Delete
                    3. Attrib       / Confirm Member Delete
                    4. Space        / Include Additional Qualifiers

When the data set list is displayed, enter either:
"/" on the data set list command field for the command prompt pop-up,
an ISPF line command, the name of a TSO command, CLIST, or REXX exec, or
"=" to execute the previous command.
Option ==>
F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel

```

Figure 79. Data Set List Utility Panel (ISRUDLP)

Data Set List Utility Panel Action Bar

The Data Set List Utility Panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
RefList	See the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral lists.
<p>Note: When you use a referral list from within the Data Set List Utility, the following functions are performed before the referral list is processed:</p> <ul style="list-style-type: none"> • The quotes are removed from the data set name. • The value in ZPREFIX is added preceding the non-quoted data set name if the first qualifier is not ZPREFIX. • The member name is removed. 	
RefMode	See the Personal List Modes section of the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral list modes.

Data Set List Utility (Option 3.4)

Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers you the following choices: <ol style="list-style-type: none">1 General2 Displaying a Data Set list3 Printing a Data Set list4 Display/Print VTOC information5 Appendices6 Index

Data Set List Utility Panel Fields

The fields on this panel are:

Dsname Level

This field is used to specify the level or levels of any data set that you want ISPF to list or print for you. An optional installation exit, called the data set list (DSLISL) exit, can control whether a data set name should appear in the list. Refer to *ISPF Planning and Customizing* for more information about this exit.

Note: ISPF does not support tape data sets.

When you specify the Dsname Level, you are defining the level qualifiers for the data set names to be included in the list. Therefore, in Figure 79 on page 123, the value USERID represents the first level of a data set name. For example, an ISPF library has a three-level name: project, group, and type.

ISPF retains the information you put in this field and displays it the next time you use this panel.

Except for the first level, you can specify the level qualifiers fully, partially, or use defaults. Do not enclose the value in the **Dsname Level** field in quotes.

Asterisks and percent signs may be used to filter the list of data sets that is displayed. For ICF catalog lists and volume lists, asterisks and percent signs may be used in the high level qualifier. Asterisks may be used anywhere in a qualifier, not just in the first and last positions. However, one qualifier must be at least partially qualified.

A single asterisk by itself indicates that at least one qualifier is needed to occupy that position. A single asterisk within a qualifier indicates that zero or more characters can occupy that position. A double asterisk by itself indicates that zero or more qualifiers can occupy that position. A double asterisk is invalid within a qualifier.

In this example, all data set names with SYS1 as the first qualifier and at least one other qualifier will be listed.

SYS1.*

In this example, all data set names with SYS1 as the first qualifier will be listed.

SYS1 or SYS1.**

In this example, all data set names that have a qualifier of *clist* and are in catalogs that you have authority to will be listed. A VTOC list will contain all data set names that have a qualifier of *clist*.

******.CLIST

Notes:

1. If you enter a high-level qualifier of '*' or '**', ISPF displays a pop-up window to warn you that the search will be for all catalogs on the system and will take time. If there are many catalogs, this search could take a considerable amount of time. You can press Enter to continue the search, or you can enter Cancel or End from the pop-up window to cancel the search. Please be aware that if you have mount authority, a catalog search with '*' or '**' as the high-level qualifier can require that volumes be mounted for the catalogs to be searched.
2. The ISPF Configuration table contains a selectable option to disallow the use of the '*' or '%' in the high level qualifier.

Note:

A single percent sign indicates that any one single alphameric or national character can occupy that position. One to eight percent signs can be specified in each qualifier. The following example is valid for Dsname Level:

AAA%*.B*%%B.C

In this example, the list will contain all data sets that start with AAA and one or more other characters, have a second qualifier that starts and ends with B and has at least three other characters between the B's, and have a third qualifier of 'C' are listed. The list will contain entries from catalogs that you have authority to. A VTOC list will contain entries that match the above characteristics.

In the following example, the list will contain all data sets that start with SYS and one other character, such as SYS1 or SYS2. If you enter a SYS% alias for a SYS1 data set as the Dsname Level (SYSP as a single qualifier), you see SYSP as an ALIAS because this single qualifier is an alias for SYS1. If you enter SYSP and another qualifier (SYSP.PARMLIB), no data set names are found that match. The data set names pointed to by the SYS% alias can be listed using SYS1 and a volume.

SYS%

PRO**CT is not valid as a data set name level because a double asterisk (**) is not valid in the middle of a qualifier.

Alias names that match the specified Dsname Level will be displayed as the alias name itself. The volume field for all alias names will contain the characters '*ALIAS' to indicate this. Real names that match the Dsname Level will also be displayed.

If you enter ISPFTEST as a Dsname Level and you have real data set names that start with ISPFTEST and aliases for those real names that start with ISPFTEST, you would see a list of this format:

ISPFTEST.BASE.CLIST	TSOPK1
ISPFTEST.BASE.CLIST.ALIAS	*ALIAS
ISPFTEST.BASE.SOURCE	TSOPK1
ISPFTEST.BASE.SOURCE.ALIAS	*ALIAS

A VSAM cluster entry is flagged in the volume field as '*VSAM*'. A VSAM path entry is flagged in the volume field as '*PATH*'.

Data Set List Utility (Option 3.4)

Notes:

1. The DSLIST can contain duplicate names and, for performance reasons, option 3.4 does not attempt to remove them. The existence of duplicates may be inconsistent when changing the DSLEVEL qualifiers. For example, SYS1.PARM.* may have different results than SYS1.PAR*. Duplicate entries may or may not display in a consistent manner, however the DSLIST will always be complete, with no omissions.
2. If a VSAM cluster matches the Dsname Level, all parts of the cluster are listed even if the data and index portions do not match the Dsname Level.

When a multicluster (key-range) data portion of a VSAM cluster is displayed on a catalog list, no information is shown except for the volume and device. The information comes from the VTOC and the catalog name does not match the VTOC name. When using a VTOC list the information is displayed.

Volume Serial

Use this field to specify the volume serial whose VTOC is to be used by ISPF to display or print a list of data set names or VTOC information. ISPF retains the information you put in this field and displays it the next time you use this panel.

If you want to display a list of only the data sets that reside on a particular volume, leave the **Dsname Level** field blank and enter the volume serial in the **Volume** field.

You can enter a single volume name or a generic volume name to list data sets from more than one volume. The volume name can be partially specified using asterisks as global volume name characters and percent signs as placeholders in the volume name. A single asterisk within a volume name indicates that zero or more characters can occupy that position. A single percent sign indicates that any one alphanumeric or national character can occupy that position. Examples follow.

*	[Lists data set names matching the Dsname Level from all volumes]
PRM*	[Lists names from all volumes beginning with 'PRM']
M%C*	[Lists names from volumes beginning with 'M', followed by any single character, a 'C', and any three other characters]

Notes:

1. Specifying a single asterisk as a volume name will require more time to display or print the VTOC list.
2. A generic volume name can not be used to display VTOC information.

Initial View

Use this field to tell ISPF which view of the data set list you would like to see. ISPF retains the information you put in this field and displays it the next time you use this panel.

All the scroll commands are available from these displays and function normally, except for the LEFT and RIGHT commands. These commands switch from one view to another, because the panels used to show the different views are connected, as if they formed a ring. Each time you enter the RIGHT command, another view is displayed in the sequence shown in Figure 80 on page 127, starting from the current view. Each time you enter the LEFT command, another view is displayed in reverse sequence.

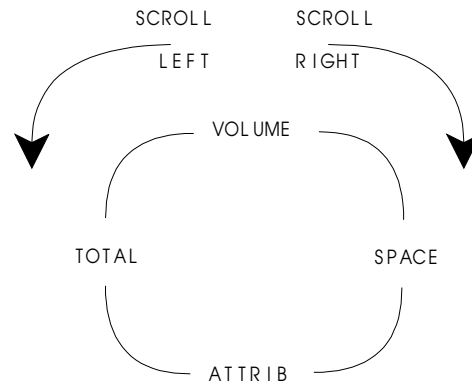


Figure 80. Sequence of Data Set List Display Views

If you enter the RIGHT command with the Total view in the sequence displayed, ISPF displays the Volume view. If you enter the LEFT command with the Volume view displayed, ISPF displays the Total view. The available views are:

1. Volume

The Volume view shows a data set list that contains data set names and the volumes on which they reside. Figure 82 on page 130 shows a typical data set list display using the Volume view.

2. Space

The Space view shows a data set list that contains data set names, tracks, percentages used, extents, and devices. Figure 83 on page 131 shows a typical data set list display using the Space view.

3. Attrib

The Attributes view shows a data set list that contains data set names, data set organizations, record formats, logical record lengths, and block sizes. Figure 84 on page 132 shows a typical data set list display using the Attributes view.

Note: For each of the above, the list is sorted by data set name. See the list under Figure 85 on page 132 for descriptions of the fields shown on this panel.

4. Total

The Total view shows a data set list that contains all the information displayed by the Volume, Space, and Attributes views, plus the created, expired, and referred dates. Figure 85 on page 132 shows a typical data set list display using the Total view. The list is sorted by data set name and has two lines per data set. See the list under the figure for descriptions of the fields shown on this panel.

Confirm Data Set Delete

This field controls whether the Confirm Delete panel appears when you are using the D (delete data set) line command from the displayed data set list or the TSO DELETE command. Use a slash to select this option.

If you select this option, ISPF displays the Confirm Delete panel (Figure 66 on page 106), giving you an opportunity to change your mind and keep the data set. If you try to delete an unexpired data set, the Confirm Purge panel (Figure 67 on page 107) is displayed following the Confirm Delete panel. Follow the directions on the panel to either confirm or cancel the data set purge.

Data Set List Utility (Option 3.4)

Attention:

If you deselect the option and the data set is deleted, it cannot be retrieved.

See “D — Delete Data Set” on page 145 for more information about the D line command.

Confirm Member Delete

This field controls whether the Confirm Member Delete panel appears when you are using the D (delete) command for a member in displayed data set list. Use a slash to select this option.

If you select this option, ISPF displays the Confirm Member Delete panel (Figure 81), giving you an opportunity to change your mind and keep the member.

```
Menu  Functions  Confirm  Utilities  Help
-
D      ISP Workpace
      Confirm Member Delete

Data Set Name:
USERID.PRIVATE.PANELS

Member to be Deleted:
F52UG251

Set member delete confirmation off

Press ENTER to confirm delete.
Press CANCEL or EXIT to cancel delete.
F1=Help  F2=Split  F3=Exit  F7=Backward
F8=Forward F9=Swap  F12=Cancel

Command ==>
F1=Help  F2=Split  F3=Exit  F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel

Scroll ==> PAGE
```

Figure 81. Confirm Member Delete Panel (ISRUELC)

Include Additional Qualifiers

This field is used to generate the data set list with all data sets matching the qualifiers in the Dsname Level field, including data sets with additional qualifiers.

If this field is not selected, the data set list will be restricted to data sets that match only the qualifiers entered in the Dsname Level field.

Data Set List Utility Options

The following sections describe the options shown on the Data Set List Utility panel.

Blank Display Data Set List

Leave the Option line blank to display a data set list. Also, you must do the following:

Data Set List Utility (Option 3.4)

1. Enter one or more data set name level qualifiers in the **Dsname Level** field. See “Dsname Level” on page 124 for more information.
2. Enter a volume serial in the **Volume** field if you want ISPF to create a data set list from the VTOC. If you leave this field blank, the list is created from the catalog. See “Volume Serial” on page 126 for more information.
3. In the **Initial View** field, enter the view of the data set list—Volume, Space, Attributes, or Total—that you want to see first. Examples of these views are shown in Figure 82 on page 130, Figure 83 on page 131, Figure 84 on page 132, and Figure 85 on page 132, respectively.
4. Enter a slash (/) in the **Confirm Delete** field to tell ISPF to display a confirmation panel if you enter the D (delete data set) line command or the TSO DELETE command. See “Confirm Delete Request” on page 127 for more information.
5. Enter a slash (/) in the **Confirm Member Delete** field to tell ISPF to display a confirmation panel if you enter the D (delete) command for a member in a data set list.
6. Press Enter to display the data set list, as shown in Figure 82 on page 130.

Note: If a plus displays after the volume serial (for example, HSM020+) on a list obtained from the catalog, the data set spans multiple volumes. Information displayed about that data set by selecting Information or Short Information or by using the Space or Total view will represent the total amounts across all used volumes.

When a VTOC list is displayed and a multivolume data set is included on that volume, there will not be an indicator that this data set spans multiple volumes, and the information on a space or total view will be for that volume only. The information displayed on a VTOC list is only information obtained from the VTOC of that volume. When the multivolume data set is selected for information or for short information, the space information will be for all volumes that the data set spans.

Data Set List Utility (Option 3.4)

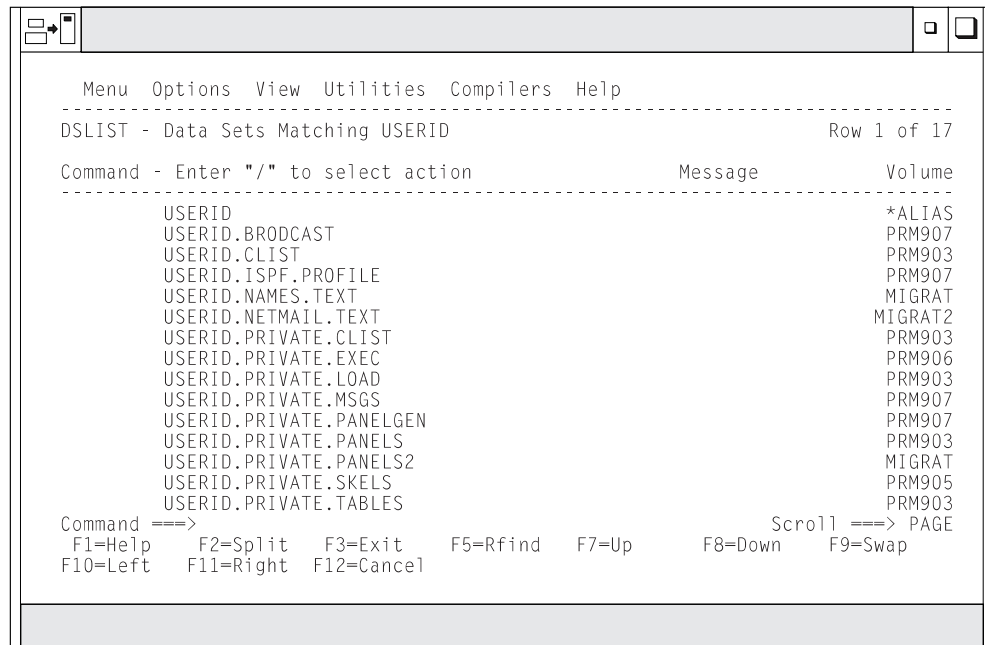


Figure 82. Data Set List - Volume View (ISRUDSL0)

Data Set List Panel Action Bar: The Data Set List panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Options

The Options pull-down offers the following choices:

DSLIS - Settings...

The settings to control the behavior of the data set list display. Options are:

- Display Edit/View entry panel

Note: If this field is selected and a workstation Edit request is initiated when no valid workstation connection exists, ISPF indicates on the Edit/View entry panel that no connection exists and treats the request as a host Edit request.

- Update ON (Reference lists)
- List pattern for MO,CO,RS actions
- Show status for MO,CO,RS actions
- Confirm Member delete
- Confirm Data Set delete
- Do not show expanded command
- E,V,B enhanced member list

Selecting this choice causes the enhanced member list to be used when the E,V, or B commands are used. De-selecting this choice causes traditional member list processing to occur.

Refresh List

Refresh the display of the data set list.

Append to List...

Select a Personal data set list to append to the existing DSLIST. The DSLIST is rebuilt, including the data sets or data set name levels from the personal list selected.

Note: The APPEND is based on the selected personal data set list. If an entry in the list is not quoted, your TSO prefix is added as the first level of the data set name. If the entry contains a member, the member is ignored. Duplicate personal list entries are ignored. If the entry contains a volume and **Include volume on retrieve** is selected on the Referral List settings panel, a VTOC search is used instead of the catalog. A catalog search is recommended for best performance. A volume should be used only if the data set is not cataloged.

Enter the DSLIST primary command REFRESH on the DSLIST display panel to erase all appended personal lists.

Save List

Saves the data set list to a file.

Reset Resets the data set list.

View The View pull-down offers the following choices:

Note: The current setting will be shown as an unavailable choice; that is, it will display in blue (the default) with an asterisk as the first digit of the selection number (if you are running in GUI mode, the choice will be *grayed*).

- 1 **Volume** Changes the display to the Volume view, as shown in Figure 82 on page 130.
- 2 **Space** Changes the display to the Space view.

Menu Options View Utilities Compilers Help					
DSLIST - Data Sets Matching KEENE					Row 1 of 59
Command - Enter "/" to select action					
	Tracks	%Used	XT	Device	

KEENE					
KEENE.ACCOUNT.FILE					
KEENE.ACCOUNT.FILE.DATA					
KEENE.ACCOUNT.FILE.INDEX					
KEENE.BATCH.TABLES					
KEENE.BROADCAST					
KEENE.BUILD.LIST00	1	0	1	3390	
KEENE.BUILD.LIST01	1	0	1	3390	
KEENE.BUILD.LIST03					
KEENE.BUILD.LIST04					
KEENE.BUILD.LIST05					
KEENE.BUILD.LIST06					
KEENE.BUILD.LIST07					
KEENE.BUILD.LIST08	5	0	1	3390	
KEENE.BUILD.LIST09					

Command ==>					Scroll ==> PAGE
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down
F10=Left	F11=Right	F12=Cancel			

Figure 83. Data Set List - Space View (ISRUDSL0)

3 **Attributes** Changes the display to the Attributes view.



Figure 85. Data Set List - Total View (ISRUDSL0)

5 By name
6 By Message
7 By Volume

- 8 By Dsorg
- 9 By Recfm
- 10 By Lrecl
- 11 By Blksz
- 12 By Tracks
- 13 By Percent Used
- 14 By Extents
- 15 By Device
- 16 By Creation date
- 17 By Expiration date
- 18 By Referenced date
- 19 By Volume indicator.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Compilers

The Compilers pull-down offers you the following choices:

- 1 **Foreground Compilers.** Displays the Foreground Selection Panel.
- 2 **Background Compilers.** Displays the Batch Selection Panel.
- 3 **ISPPREP Panel Utility...** Displays the Preprocessed Panel Utility panel.
- 4 **DTL Compiler...** Displays the ISPF Dialog Tag Language Conversion Utility panel.

Help

The Help pull-down offers you the following choices:

- 1 General
- 2 Description of ISPF-supplied line commands
- 3 Using the "/" character to represent a quoted Data Set name
- 4 Format of the displayed list
- 5 Available primary commands when the list is displayed
- 6 Appendices
- 7 Index

Data Set List Panel Fields: The following fields can appear on the data set list panels. The fields displayed will vary depending on the view that you select.

Command

Field used to enter a line command, TSO command, CLIST, or REXX EXEC when displaying a data set list. See "Blank Display Data Set List" on page 128 for more information.

Name Data set name, as in the VTOC or catalog.

Message

This field is initially blank. However, after you carry out an operation on a data set using one of the built-in line commands listed on the Data Set List Utility panel, a message appears in this field showing the last function used on that data set. The line commands and the messages that appear when they are used are shown in Table 12.

Table 12. Line Commands and Messages

Line Command	Message
B	Browsed

Data Set List Utility (Option 3.4)

Table 12. Line Commands and Messages (continued)

Line Command	Message
C	Cataloged
E	Edited
U	Uncataloged
D	Deleted
P	Printed
PX	Index Printed
R	Renamed
I	Info - I
M	Member List
S	Info - S
Z	Compressed
F	Free Completed
=	Message shown for last command entered.
V	Viewed
RA	Refadd
CO	Copied
MO	Moved
RS	Reset
RA	Add data set to personal dslist
X	— 1 lines not displayed
NX	no message
NXF	no message
NXL	no message

If you enter a TSO command, CLIST, or REXX EXEC on the Command line, a default message appears in the Message field. The message you see depends on the results of the TSO command, CLIST, or REXX EXEC and has the following format:

```
XXXXXXXX RC=#
```

where:

XXXXXXXX The command entered

The return code.

Note: See “Data Set List Utility Line Commands” on page 141 for a description of the Data Set List Utility line commands.

Volume

Volume serial number.

Multivol

Indicates more than one volume or a migration level in the following manner:

+ (plus sign)

More than one volume

1 Migrated to disk

2 Migrated to tape

Tracks Number of tracks allocated to the data set.

% Percentage of allocated tracks used, expressed in whole numbers, not rounded. If any track is used, the minimum percentage is 1. If the data set is a PDSE, the % refers to the percentage of allocated pages used.

Note: See "F — Free Unused Space" on page 146 for information about freeing track space manually.

XT Number of extents allocated to the data set.

Device

Device type on which the volume that contains the data set is mounted.

Dsorg One of the following data set organizations. In the definitions of these data set organizations, *unmovable* means the data set contains absolute addresses instead of relative addresses. These data sets are not moved to any other DASD storage location during read/write operations.

PS Sequential

PS-E Sequential Extended

PSU Sequential unmovable

PO Partitioned

POU Partitioned unmovable

PO-E Partitioned extended

DA Direct

DAU Direct unmovable

IS Indexed sequential

ISU Indexed sequential unmovable

VS VSAM

VS-E VSAM Extended

blank None of the preceding data set organizations.

Recfm Record format specified when the data set was allocated. See "A — Allocate New Data Set" on page 95 for more information about record formats.

Lrecl Logical record length, in bytes, specified when the data set was allocated.

Blksz Block size, in bytes, specified when the data set was allocated.

Blksize

Block size, in bytes, specified when the data set was allocated.

Created

Creation date in the national format.

Expires

Expiration date in the national format, specified when the data set was allocated. If no expiration date was specified, *****None***** is displayed. If a "never expire" date (1999/12/31 or its equivalent) is specified, *****Perm***** is displayed. See "A — Allocate New Data Set" on page 95 for more information about expiration dates.

Referred

Date, in the national format, that this data set was last accessed.

Data Set List Utility (Option 3.4)

Actions You Can Take from the Data Set List Panel: The following sections describe actions you can take from the Data Set List panel.

Line Commands: Line commands can be entered in the Command field to the left of the data set names. See “Data Set List Utility Line Commands” on page 141 for definitions of these line commands.

TSO Commands, CLISTs, and REXX EXECs: Besides the ISPF-supplied line commands, you can also enter TSO commands, CLISTs, and REXX EXECs that use a fully-qualified data set name as an operand. You can type over the field containing the data set name to enter commands that require more space than is provided in the **Command** field. ISPF determines the end of the command by scanning the **Command** field and the field containing the data set name from right to left. The first character found that differs from the original is considered to be the last character of the command. Therefore, it is best to enter a blank after the last character of your command if it extends into the field containing the data set name.

TSO commands, CLISTs, and REXX EXECs entered are invoked using the ISPF SELECT CMD service. Variable names starting with an ampersand (&) are evaluated by ISPF. If you want the underlying command processor to see the ampersand you must specify 2 ampersands. For example:

```
DEF NONVSAM(NAME(/) DEVT(0000) VOLUME(&&SYSR2))
```

Note: If the TSO command, CLIST, or REXX EXEC issues a return code greater than or equal to 8, processing stops and an error message is displayed.

Using the Slash (/) Character: If a command, CLIST, or REXX EXEC requires the data set name in a position other than the first operand or if other operands are needed, you can use the slash (/) character to represent the quoted data set name. If no operands are specified after the command, ISPF uses the name of the data set being acted on as the command’s first operand.

To specify a member of a partitioned data set, enclose the member name in parentheses immediately following the / character. You can use this format with the V (view data set), B (browse data set), E (edit data set), and M (display member list) line commands. For information about these line commands, see “Data Set List Utility Line Commands” on page 141.

You may find it helpful to call the SHOWCMD primary command before using the slash (/) for the first time. After you call SHOWCMD, a special Data Set List Utility panel appears each time you enter a line command, TSO command, CLIST, or REXX EXEC on a data set list display. The panel shows you the command you entered and how ISPF expanded, and thus interpreted, that command. See “SHOWCMD Command” on page 152 for more information about and an example of the SHOWCMD primary command.

The following rules apply to substituting the slash (/) character for a data set name. Each rule is followed by one or more examples that prove the rule by using either a CLIST or a line command.

In each example, the data set being acted on is USER.TEST.DATA, which always appears, either completely or partially, in uppercase. However, the CLIST or line command is typed in lowercase to differentiate between the CLIST or line command and USER.TEST.DATA when this data set name is either completely or partially typed over.

Each example also shows:

Original

The line as it appears before the CLIST or line command is entered.

As typed

The line as it appears after the CLIST or line command is typed.

After The line as it appears after the CLIST or line command is expanded to show the placement of quotes and data set name substitution for the slash (/) character.

1. You can type over the data set name. Expanded commands can contain a maximum of 255 characters and are converted to uppercase. The following example shows how rule 1 would apply if you typed %clist1 da(/):

```
(Original)      USER.TEST.DATA
(As typed) %clist1 da(/).TEST.DATA
(After)      %CLIST1 DA('USER.TEST.DATA')
```

2. The data set name substitution character (/) is replaced with the quoted, fully-qualified data set name if the character following the / is not a number, letter, or national character. The following example shows how rule 2 would apply if you typed %clist2 / newdate(1986/03/15):

```
(Original)      USER.TEST.DATA
(As typed) %clist2 / newdate(1986/03/15)
(After)      %CLIST2 'USER.TEST.DATA' NEWDATE(1986/03/15)
```

3. If a slash (/) is followed immediately by a member name in parentheses, the ending quote for the data set is placed after the closing parenthesis that follows the member name. The following example shows how rule 3 would apply if you typed %clist3 da(/(xyz)):

```
(Original)      USER.TEST.DATA
(As typed) %clist3 da(/(xyz)).DATA
(After)      %CLIST3 DA('USER.TEST.DATA(XYZ)')
```

4. If the first operand is the unquoted data set name as it appears in the list, quotes are added around it or after a closing parenthesis following a member name. The following example shows how rule 4 would apply if you typed b (the B (browse) line command) and added member (abc):

```
(Original)      USER.TEST.DATA
(As typed)  b      USER.TEST.DATA(abc)
(After)      B 'USER.TEST.DATA(ABC)'
```

5. If the line command does not have any operands or if the data set name has not been substituted as specified by either rule 3 or rule 4, the quoted, fully-qualified data set name is added to the end of the line command. The following example shows how rule 5 would apply if you typed %clist4 user.test.fortran:

```
(Original)      USER.TEST.DATA
(As typed) %clist4 user.test.fortran
(After)      %CLIST4 USER.TEST.FORTRAN 'USER.TEST.DATA'
```

The following example shows how rule 5 would apply if you typed %clist4 'user.test.fortran'. The purpose of this example is to show that if you enclose the CLIST operand in quotes, ISPF still puts quotes around the data set name being acted on. The results are the same.

```
(Original)      USER.TEST.DATA
(As typed) %clist4 'user.test.fortran'
(After)      %CLIST4 'USER.TEST.FORTRAN' 'USER.TEST.DATA'
```

Data Set List Utility (Option 3.4)

The following example shows how rule 5 on page 137 would apply if you typed %clist5 member1(abc). The purpose of this example is to show that the results do not change if the CLIST operand contains a member name enclosed in parentheses.

```
(Original)          USER.TEST.DATA
(As typed) %clist5 member1(abc)ATA
(After)      %CLIST5 MEMBER1(ABC) 'USER.TEST.DATA'
```

TSO Command/CLIST/REXX EXEC Variables: If you use a TSO command, CLIST, or REXX EXEC, ISPF puts the variables described in Table 13 in the shared pool for the TSO command, CLIST, or REXX EXEC to use.

Table 13. TSO Command/CLIST/REXX EXEC Variables (Output)

Variable Name	Description	Length in Characters
ZDLCMD	Line command	
ZDLXSTAT	Exclude status	
ZDLMVOL	Volume indicator	
ZDLDSN	Data set name	44
ZDLVOL	Volume	6
ZDLDEV	Device type	8
ZDLDSORG	Data set organization	4
ZDLRECFM	Data set record format	5
ZDLLRECL	Data set logical record length	5
ZDLBLKSZ	Data set block size	5
ZDLSIZE	Data set size in tracks	6
ZDLUSED	Percentage of used tracks	3
ZDLEXT	Number of extents used	3
ZDLDSNTP	Data set name type	8
ZDLCDATE	Creation date	10
ZDLEDATE	Expiration date	10
ZDLRDATE	Date last referenced	10
ZDLCONF	Delete confirmation (Y N)	1
ZDLLCMD	Expanded line command	255
ZDLCAT	Cataloged status; one of the following:	(1)
	0 Data set is cataloged on volume ZDLVOL.	
	2 Data set is cataloged on a volume other than ZDLVOL and is uncataloged on volume ZDLVOL.	
	4 Data set is uncataloged on volume ZDLVOL.	
	6 Data set is not cataloged on any volume and is uncataloged on volume ZDLVOL.	
	8 Data set is not available on volume ZDLVOL. This status is returned for data sets that have been either migrated or deleted.	

A TSO command, CLIST, or REXX EXEC can set the following variables and place them in the shared pool to communicate with the Data Set List utility (option 3.4).

Table 14. TSO Command/CLIST/REXX EXEC Variables (Input)

Variable Name	Description	Length in Characters
ZDLNDSN	New data set name to appear in list	44
ZDLMSG	Message to appear in list	16
ZDLREF	Refresh data set information; Y N	1

P — Print Data Set List

Use option P to print a data set list. You must:

- Enter one of the following:
 - One or more data set name level qualifiers in the **Dsname Level** field and a volume serial in the **Volume** field. The list will contain all data sets for the specified levels and volume. Only the specified volume is searched. See “Dsname Level” on page 124 and “Volume Serial” on page 126 for more information.
 - One or more data set name level qualifiers in the **Dsname Level** field, but leave the **Volume** field blank. The list will contain all data sets for the specified levels that are cataloged.
 - A volume serial in the **Volume** field, but leave the **Dsname Level** field blank. The list will contain only the data sets on the specified volume. Only the specified volume is searched.

Note: All data set lists are formatted the same when they are printed. Therefore, values entered in the **Initial View** field have no effect when you use option P.

- Press Enter to print the data set list. The data set list is stored in the ISPF list data set.

V — Display VTOC Information

Use option V to display VTOC (volume table of contents) information. The List VTOC utility (formerly option 3.7) has been removed from ISPF. Options V and PV perform the function formerly provided by this utility.

To use option V, you must do the following:

- In the **Volume** field, specify the volume serial for which you want ISPF to display information.

Note: VTOC information is formatted the same, whether displayed or printed. Therefore, values entered in the **Initial Display View** field have no effect when you use option V.

- Press Enter to display the VTOC information.

Note: The **Dsname Level** field is not applicable for the V or PV command. Only the **Volume** field is relevant.

Figure 86 on page 140 shows an example of a VTOC display.

Data Set List Utility (Option 3.4)

The screenshot shows a terminal window titled "VTOC Summary Information". It displays the following data:

Volume Data		VTOC Data		Free Space		Tracks	Cyls
Tracks . . :	33,390	Tracks . . :	59	Size . . . :	11,546		764
%Used . . :	65	%Used . . . :	18	Largest . . :	5,168		344
Trks/Cyls:	15	Free DSCBS:	2,437	Free Extents . . :			15

Below the table, there is a command prompt "Command ===>" and a list of function keys: F1=Help, F2=Split, F3=Exit, F9=Swap, F12=Cancel.

4. Total

The following actions will be available when the list is displayed:
Enter a "/" on the data set list command field for command prompt pop-up.
Enter TSO commands, CLIST, REXX execs, or "=" to execute previous command.

Command ===> V
F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F10=Actions F12=Cancel

Figure 86. VTOC Summary Information Panel (ISRUDSLV)

Track values do not include the remaining alternate tracks for the volume. The free space track values are the number of tracks for the free cylinders plus any additional free tracks.

The fields shown on the VTOC Summary Information panel are:

Unit Shows the type of DASD device the volume is on, such as 3330, 3350, 3380, and so forth.

Volume Data

Describes general information about the volume:

Tracks Total tracks on the volume.

%Used

Percentage of total tracks or pages not available for allocation.

Trks/Cyls

Number of tracks per cylinder for this volume.

VTOC Data

Describes general information about the VTOC on the volume:

Tracks Total tracks allocated to the VTOC.

%Used

Percentage of allocated tracks or pages used by data set control blocks (DSCBs).

Free DSCBS

Number of unused DSCBs.

Free Space

Describes the free space available for data set allocation on the volume under the headings Tracks and Cyls, showing:

Size Total number of free tracks and cylinders.

Largest

The largest number of contiguous free tracks and cylinders.

Free Extents

The number of free areas with free cylinders.

PV — Print VTOC Information

Use option PV to print VTOC information. The List VTOC utility (formerly option 3.7) has been removed from ISPF. Options V and PV perform the function formerly provided by this utility.

To use option PV, you must do the following:

1. Blank out the **Dsname Level** field.
2. In the **Volume** field, specify the volume serial for which you want ISPF to print information.

Note: VTOC information is formatted the same, whether displayed or printed. Therefore, values entered in the **Initial View** field have no effect when using option PV.

3. Press Enter to print the VTOC information. The VTOC information is stored in the ISPF list data set.

Note: The **Dsname Level** field is not applicable for the PV or V command. Only the **Volume** field is relevant.

Data Set List Utility Line Commands

After you display a data set list by leaving the **Option** field blank, you can enter a line command to the left of the data set name. You can also enter TSO commands, CLIST names, or REXX EXEC names. The slash (/) character, which can be used with TSO commands, CLISTs, and REXX EXECs, can also be used with the V (view data set), B (browse data set), E (edit data set), and M (display member list) line commands to specify a member name or a pattern. You can type over the field containing the data set name to enter commands that require more than the space provided. For more information about using this symbol, see “Using the Slash (/) Character” on page 136. For more information about member name patterns, see the description under the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*.

Line commands that are valid for aliases may be used with any alias data sets that are listed. Uncatalog, delete, and rename commands are not valid for alias data sets. A line command such as 'B' for browse or 'I' for information will display the real name of the data set.

The **Command** field and the field containing the data set name fields make up a single point-and-shoot field. If you enter a slash in the **Command** field or if you select any part of the combined point-and-shoot field, the Data Set List Actions pop-up shown in Figure 87 on page 142 is displayed so that you can select the command you want to use.

Note: If a CLIST, REXX EXEC, or program is issued against a data set, ISPF gathers information on the data set and makes it available through dialog variables. See Table 13 on page 138 for the list of those variables. If the data set being processed is an unmounted HFS, a temporary mount is issued, updating the last referenced date of the HFS.

Data Set List Utility (Option 3.4)

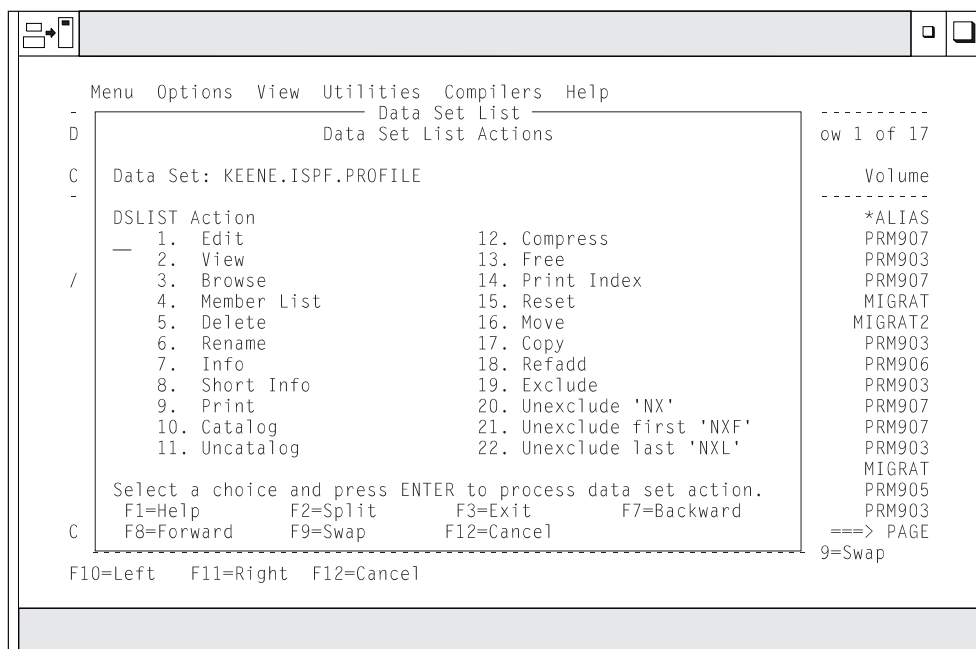


Figure 87. Data Set List Commands Pop-Up (ISRUDABC)

E — Edit Data Set

For the E command, the processing is similar to selecting the Edit option (2) and entering the library or data set name on the Edit Entry Panel, except that mixed mode is the assumed operation mode.

Note: Multivolume data sets do not support the **Volume Serial** field for the Edit command.

If you select a library or other partitioned data set, an Edit member list is displayed. See the **Using Member Selection Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.

The E line command uses the values from a prompt panel to specify items including the initial macro, profile name, panel name, format, mixed mode, and workstation editing. These values are stored in the profile and are used on subsequent edits.

To change these values, use the **DSLIS** **settings...** panel on the data set list **Options** pull-down. Check both the “E,V,B enhanced member list” and the “Display Edit/View entry panel” options. The prompt panel is always shown when you edit a sequential file, or when you directly edit a member of a partitioned data set. When you are using a member list you can force the display of the panel by placing a slash mark (/) in the **Prompt** field next to the member you select.

If the editor appears to be invoking an unexpected initial macro, or it appears to be using an unexpected profile, follow the process above to check the values on the prompt panel.

V — View Data Set

For the V command, the processing is similar to selecting the View option (1) and entering the library or data set name on the View Entry Panel. If you have set your DSLIST options to not show the edit/view entry panel:

- Mixed mode is the assumed operation mode.
- You cannot specify a data set format, an edit profile, or an initial macro.

Note: Multivolume data sets do not support the **Volume Serial** field for the View command.

If you select a library or other partitioned data set, an Edit member list is displayed. See the **Using Member Selection Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.

B — Browse Data Set

For the B command, processing is the same as if you specify Browse Mode from View (option 1), except that mixed mode is the assumed operation mode and you cannot specify a data set format. To browse a data set with mixed mode off, you must use the View option; deselect **Mixed Mode** and select **Browse Mode** on the View Entry Panel. If you enter the B line command beside an ISPF library or other partitioned data set, a Browse member list is displayed. See the **Using Member Selection Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.

Note: From a catalog list, multivolume data sets do not support the **Volume Serial** field for the Browse command.

M — Display Member List

For the M command, a member selection list of a partitioned data set is displayed. This member list provides an expanded Line Command field in the area to the left of the list. The Line Command field in other member lists has room for only one character, unless the browse, view, or edit *enhanced* member list is selected.

From the member list, you can use the same primary commands and line commands that are valid for Library utility (option 3.1) member selection lists. See the **Using Member Selection Lists** and **Library and Data Set List Utility Line Commands** sections of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.

Notes:

1. From a VTOC list, you can browse a single volume of a multivolume non-SMS data set.
2. You can *chain* the line commands; that is, you can select multiple members from a member list for various processing tasks. Use the CANCEL command (from a View, Browse, or Edit session) to break the chain and return to the member list.

You can also enter TSO commands, CLISTs, or REXX EXECs in the Line Command field. If you enter a line command other than B (browse), D (delete), E (edit), R (rename), C (copy), M (move), G (reset), J (submit), or P (print), ISPF interprets it as a TSO command, CLIST, or REXX EXEC.

The command is selected with the quoted, fully-qualified data set name and member added to it, such as:

```
COMMAND 'DSN(MEMBER)'
```


Data Set List Utility (Option 3.4)

See “TSO Commands, CLISTs, and REXX EXECs” on page 136 for more information.

Note: If the TSO command, CLIST, or REXX EXEC issues a return code greater than or equal to 8, processing stops and an error message is displayed.

Figure 88 shows an example of a member list with statistics and an expanded Line Command field.

DSLIST	Name	P020136.PRIVATE.PLS Prompt	Size	Created	Changed	Row 00001 of 00320 ID
_____	\$		1	1986/11/04	1999/02/18 10:44:53	P020136
_____	\$\$\$		1	1996/08/21	1996/08/21 11:25:54	P020136
_____	\$\$\$\$		1	1996/08/21	1996/08/21 11:26:03	P020136
_____	\$\$\$@		1	1996/11/05	1996/11/05 16:53:11	P020136
_____	\$@		1	1996/11/05	1996/11/05 16:49:36	P020136
_____	\$FORMAT		3376	1997/06/03	1997/06/03 10:36:39	PDFTOOL
_____	*		29	1997/10/10	1997/10/10 15:21:59	P020136
_____)		1	1986/11/26	1986/11/26 09:49:00	P011596
_____	#		1	1986/11/03	1989/11/02 15:14:00	P020136
_____	@		1	1996/11/05	1996/11/05 16:49:44	P020136
_____	A		5	1999/01/08	1999/03/08 16:38:15	PDFTOOL
_____	A*		1	1997/10/09	1997/10/09 13:06:00	P020136
_____	AAAAA		1	1997/10/09	1997/10/09 13:06:00	P020136
_____	ABC		1	1998/01/21	1998/01/21 15:52:23	P020136
_____	ABCGH		66	1998/07/01	1998/07/01 17:49:38	P020136
_____	ACCTEX2		46	1997/10/09	1997/10/09 13:06:00	P020136

Command ==> F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=RCHANGE
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

22/015

Figure 88. Member List Display - Expanded Line Command Field (ISRUDSM)

Figure 89 shows load module library statistics with an expanded Line Command field.

DSLIST	Name	PDFTDEV.SVT.LOAD Prompt	Alias-of	Size	TTR	AC	AM	RM
_____	APILOAD		ISPRSET	00006060	001803	00	31	24
_____	CSL		ISPRSET	00006060	001803	00	31	24
_____	FLM\$CP		FLMIO24	0000A0B8	01031C	00	24	24
_____	FLM\$CPI			000000E0	002344	00	31	ANY
_____	FLM\$DE		FLMIO24	0000A0B8	01031C	00	24	24
_____	FLM\$DT		FLMIO24	0000A0B8	01031C	00	24	24
_____	FLM\$99		FLMIO24	0000A0B8	01031C	00	24	24
_____	FLMB			000A8D98	00D906	00	31	ANY
_____	FLMBCMD		FLMDDL	000FF048	010413	00	31	ANY
_____	FLMBD\$		FLMDDL	000FF048	010413	00	31	ANY
_____	FLMCDSSV			0002BCA8	000515	00	31	ANY
_____	FLMCDSVA			0000F678	000A0E	00	31	ANY
_____	FLMCMD		FLMS7C	000C75E0	01730F	00	31	ANY
_____	FLMCNTGN			0001E988	00FA12	00	31	ANY
_____	FLMCPCS			00000148	00FA0A	00	31	ANY
_____	FLMC\$LNK		FLMIO24	0000A0B8	01031C	00	24	24
_____	FLMCSPBE			000027C0	002415	00	31	24

Command ==> F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=RCHANGE
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

22/015

Figure 89. Load Module Library Display - Expanded Line Command Field (ISRUDSM)

D — Delete Data Set

For the D command, the processing is the same as if you had selected option D from the Data Set utility (option 3.2) without specifying a volume serial. This command deletes and uncatalogs the entire data set.

Note: Delete is not allowed for multivolume data sets from a VTOC list.

If you select the Confirm Delete option on the Data Set List Utility panel, the Confirm Delete panel (Figure 66 on page 106) is displayed to allow you to continue or cancel the operation. If you are trying to delete an unexpired data set, the Confirm Purge panel (Figure 67 on page 107) is also displayed.

When you delete a data set the volume name is compared to the volume name in the configuration table. If the names match, the command specified in the configuration table is used in place of the ISPF delete processing. This allows you to delete migrated data sets without first causing them to be recalled.

R — Rename Data Set

For the R command, the processing is the same as if you had selected option R from the Data Set utility (option 3.2). The Rename Data Set panel (Figure 63 on page 103) is displayed to allow you to specify the new name.

Note: Rename is not allowed for multivolume data sets from a VTOC list.

See “R — Rename Entire Data Set” on page 102 and “Renaming Managed Data Sets” on page 103 for more information.

I — Data Set Information

For the I command, the processing is the same as if you had selected option I from the Library utility (option 3.1) or left the **Option** field blank with the Data Set utility (option 3.2). See “I — Data Set Information” on page 85 and “Information for Managed Data Sets” on page 87 for more information.

Note: For multivolume data sets, options I and S display current allocation and utilization values that represent totals from all volumes used.

S — Information (Short)

For the S command, the processing is the same as if you had selected option S from the Library utility (option 3.1) or the Data Set utility (option 3.2). See “S — Short Data Set Information” on page 89 and “Short Information for Managed Data Sets” on page 91 for more information.

P — Print Data Set

For the P command, the processing is the same as if you had selected option L from the Library utility (option 3.1). This command formats the contents of a source data set for printing and records the output in the ISPF list data set. It also produces an index listing, which appears at the beginning of the output.

Note: The Print command is not allowed for multivolume data sets from a VTOC list.

C — Catalog Data Set

For the C command, the processing is the same as if you had selected option C from the Data Set utility (option 3.2). See “C — Catalog Data Set” on page 102 for more information.

Data Set List Utility (Option 3.4)

Note: Multivolume data sets are always cataloged.

U — Uncatalog Data Set

For the U command, the processing is the same as if you had selected option U from the Data Set utility (option 3.2). See “U — Uncatalog Data Set” on page 105 for more information.

Note: The U command is not supported for multivolume data sets.

Z — Compress Data Set

For the Z command, the processing is the same as if you had selected option C from the Library utility (option 3.1). This command recovers wasted space that was formerly occupied by deleted or updated members and is now available for use again. You do not need to compress a PDSE. If you use the Z command on a PDSE, the data is not reorganized.

The Z command calls either the IEBCOPY utility or the compress request exit routine. Refer to *ISPF Planning and Customizing* for more information.

F — Free Unused Space

For the F command, space that is not being used by the data set is released. For example, if a data set is allocated with 100 tracks but is only using 60 tracks, the F command releases the 40 tracks that are not being used.

Note: The F command is not supported for multivolume data sets.

However, if the data set has been allocated with CYLS (cylinders) specified as the space units, only the tracks beyond the last cylinder used are freed. For example, if a data set occupies 1.2 of 3 allocated cylinders, the F command frees all tracks beyond the last used cylinder, leaving 2 cylinders allocated.

PX — Print Index Listing

For the PX command, the processing is the same as if you had selected option X from the Library utility (option 3.1). The index listing is recorded in the ISPF list data set. See “X — Print Index Listing” on page 85 for more information.

Note: The Print command is not allowed for multivolume data sets from a VTOC list.

RS — Reset

For the RESET command, a panel is displayed that prompts you to reset or delete ISPF statistics, and to enter a new user ID, version number, or modification level.

MO — Move

For the MOVE command, a panel is displayed that prompts you for a library or data set name for the *to* data set.

Note: The MO and CO line commands do not preserve the alias relationship between 2 load modules copied in the same interaction. The alias member is copied as a new member.

CO — Copy

For the COPY command, a panel is displayed that prompts you for a library or data set name for the *to* data set.

Note: The MO and CO line commands do not preserve the alias relationship between 2 load modules copied in the same interaction. The alias member is copied as a new member.

RA — RefAdd

For the REFADD command, you are provided with an interface to referral lists, where you can add a data set and a volume to a Personal Data Set List.

X — Exclude Data Set

For the EXCLUDE command, one data set from a data set list is excluded from the list.

NX — Unexclude Data Set

For the Unexclude command, one data set, or a set of data sets that have been excluded from a data set list are re-shown.

NXF — Unexclude First Data Set

For the UNEXCLUDE FIRST command, the first of a set of excluded data sets is re-shown.

NXL — Unexclude Last Data Set

For the UNEXCLUDE LAST command, the last of a set of excluded data sets is re-shown.

= — Repeat Last Command

For the = command, the most recently used line command is repeated. This command is most helpful when the same TSO command, CLIST, or REXX EXEC is to be called for more than one data set in a data set list. For example, suppose you have a CLIST named TESTABC and two data sets named USER.DATA1 and USER.DATA2. To run the CLIST with the two data sets consecutively from a data set list, you could:

1. Type TESTABC in the Command field beside USER.DATA1.
2. Type = in the Command field beside USER.DATA2.
3. Press Enter.

This procedure saves keystrokes because you type the CLIST name only once and you press Enter only once.

Data Set List Utility Primary Commands

Primary commands are available when you use the Data Set List utility. These commands, which you enter on the command line, are:

- APPEND
- CONFIRM
- DSLIST
- EXCLUDE
- FIND and RFIND
- LC
- LOCATE
- MEMBER
- REFRESH
- RESET
- SAVE
- SHOWCMD
- SORT
- VA, VS, VT, and VV

The following sections describe these commands, which are shown in alphabetical order.

Data Set List Utility (Option 3.4)

APPEND Command

The APPEND primary command appends additional data sets an existing displayed DSLIST. Use the following format:

APPEND [*list name* | **DSname level**]

You can use the APPEND command with no parameters to get a list of your personal data sets. Then select the one you want to append to the current list.

If you give a *list name* with the command, the list given is appended.

By specifying *DSname level* as a parameter, you can use the resulting list to select which list to append to the current one. For example, entering **APPEND Userid.C*** gives you a list of all personal lists that begin with C as the second-level identifier. Then you can select the one to append.

By specifying *DSname level* in quotes, data sets beginning with the DSname level are appended to the data set list.

CONFIRM Command

The CONFIRM primary command controls display of the Confirm Delete panel. Use the following format:

CONFIRM [ON | **OFF**]

You can use the following operands with the CONFIRM command:

ON Tells ISPF to display the Confirm Delete panel when you enter the D (delete data set) line command or TSO DELETE command. This is the default setting.

OFF Tells ISPF not to display the Confirm Delete panel.

For example, the following command would tell ISPF not to display the Confirm Delete panel:

```
CONFIRM OFF
```

EXCLUDE Command

The EXCLUDE primary command excludes data sets from a list based on a character string. Use the following format:

```
EXCLUDE [character string]
        [ALL ] [PREFIX]
        [NEXT] [CHARS]
        [FIRST] [SUFFIX]
        [LAST ] [WORD ]
        [PREV ]
```

You can use the following operands with the EXCLUDE command:

character string

Tells ISPF which data set to exclude from the list.

ALL Tells ISPF to exclude every data set in the list.

NEXT | FIRST | LAST | PREV

Operands that define the starting point, direction, and extent of the lines to exclude.

PREFIX | CHARS | SUFFIX | WORD

Operands that set the conditions for a character string match.

For example, the following command tells ISPF to exclude a data set that includes BILBO3 in the name from a list:

```
EXCLUDE BILBO3
```

FIND and RFIND Commands

The FIND primary command finds and displays a character string within the data set name. Use the following format:

```
FIND string [NEXT] [CHARS]  
             [ALL ] [PREFIX] [X]  
             [FIRST] [SUFFIX] [NX]  
             [LAST ] [WORD ]  
             [PREV ]
```

For example, the following command would tell ISPF to find all occurrences of the character string ELSE:

```
FIND ELSE ALL
```

The operands **X** and **NX** can be used to limit your search to excluded (X) or unexcluded (NX) data sets.

For more information about the operands used with this command, see “FIND—Finding Character Strings” on page 66. NEXT and CHARS are the default operands.

ISPF automatically scrolls to bring the character string to the top of the list. To repeat the search without reentering the character string, use the RFIND command.

Note: RFIND search starts from the second data set in the list. It is not cursor-sensitive.

LC Command

The LC primary command invokes the color change utility from the command line of a data set list display, as shown in Figure 90 on page 150.

Data Set List Utility (Option 3.4)

Data Set List Color Change Utility

Change one or more of the Data Set List Field Attributes and press Enter to immediately see the effect. Clearing a field restores defaults.

Field:	Color:	Intens:	Hilite:	Defaults:
Volume	BLUE	LOW	_____	Blue
* Data Set Name	GREEN	LOW	_____	Green
Data Set Stats	TURQ	LOW	_____	Turquoise
Create,Expire	YELLOW	LOW	_____	Yellow
Message	WHITE	LOW	_____	White
Tracks,Device	WHITE	LOW	_____	White
Marked Data Sets	YELLOW	HIGH	_____	Yellow

* _ Use Point-and-Shoot field attributes on Data Set Name field

----- Example -----

Command - Enter '/' to select action

Tracks	%	XT	Device	Dsorg	Recfm	Lrecl	Blksz	Created	Message	Expires	Volume
39	44	1	3390	P0	U	0	6144	1992/06/24	**None**	1993/10/09	HSM001

Command ==>

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F12=Cancel

Defaults

Figure 90. Data Set List Color Change Utility Panel (ISRDLCP)

LOCATE Command

The LOCATE primary command scrolls the list of data sets based on the field on which the data set list is sorted, as described under “SORT Command” on page 153. Use the following format:

LOCATE *lparm*

You can use the *lparm* operand with the LOCATE command for either of the following situations:

- If the list is sorted by data set name, specify a data set name.
- If the list is sorted by another field, specify a value for the field by which the list is sorted.

For example, for a data set list sorted by volume, you could enter the following:

LOCATE TSOPK1

This command locates the first data set in the list on volume TSOPK1. If the value is not found, the list is displayed starting with the entry before which the specified value would have occurred.

MEMBER Command

The MEMBER primary command is used to search for a member name or pattern in all of the partitioned data sets in the data set list. It can be abbreviated as M or MEM. The parameters, X, EX, NX, RECALL1, and RECALL2 are optional. X and EX limit the search to excluded data sets. NX limits the search to non-excluded data sets. RECALL1 includes data sets migrated to DASD in the search. RECALL2 includes all migrated data sets in the search. Use the following format:

```
MEMBER string X
          [ EX
          [ NX
          [ RECALL1
          [ RECALL2
```

The data set list is scrolled so that the first data set containing the member or pattern is at the top of the list. The MEMBER command finds any occurrence of the specified member name or pattern within a partitioned data set.

REFRESH Command

The REFRESH primary command updates the display of the data set list to whatever the list's current state is. For example, after deleting several items on the list, REFRESH causes the list to be displayed without the deleted items. If you have appended to the list, REFRESH restores the list to its status *before* the append operation.

RESET Command

The RESET primary command unexcludes data sets that were excluded from a list, and removes any pending line commands and messages from the data set list.

SAVE Command

The SAVE primary command writes the data set list to the ISPF list data set or to a sequential data set. ISPF writes the data set list in its current sort order. Use the following format:

```
SAVE [list-id]
```

where *list-id* is an optional user-specified qualifier of the data set to which the member list will be written. ISPF names the data set:

```
prefix.userid.list-id.DATASETS
```

where:

prefix

Your data set prefix, as specified in your TSO user profile. If you have no prefix set, or if your prefix is the same as your user ID, the prefix is omitted and the data set name will be: *userid.list-id.DATASETS*.

userid

Your TSO user ID.

The data set is created if it does not exist, or written over if it exists, and has compatible attributes. If you omit the *list-id* operand, the list is written to the ISPF list data set and includes the list headings.

The following command would tell ISPF to write the list to a sequential data set named either *prefix.userid.MY.DATASETS* or *userid.MY.DATASETS*.

```
SAVE MY
```

If the sequential data set already exists, ISPF writes over it; if not, ISPF creates it.

ISPF displays a message, if necessary, when you enter a SAVE or SORT primary command that shows that the data needed to do the function is being retrieved. The keyboard locks when this message appears and stays locked until the SAVE or SORT command is completed.

Data Set List Utility (Option 3.4)

SHOWCMD Command

The SHOWCMD primary command controls the display of line commands and their operands as they are called. Use the following format:

SHOWCMD [ON | OFF]

where:

ON

Tells ISPF to display line commands. This is the default setting.

OFF

Tells ISPF not to display line commands. Though the SHOWCMD default is ON, SHOWCMD is initially set to OFF.

After you enter SHOWCMD ON, a panel (Figure 91 on page 153) is displayed each time you enter a line command, TSO command, CLIST, or REXX EXEC on a data set list display.

On this panel, you see the command as you typed it and then, a few lines down, you see the command as ISPF interpreted it. Seeing these commands displayed can be especially useful when you use the slash (/) character to substitute for the data set name because the panel shows the line command after expansion occurs. Therefore, you can tell immediately whether you need to add operands to the command.

For example, suppose you have a data set list displayed on the screen and decide to browse member MEMB1 of data set USER.TEST.DATA. To see how ISPF interprets the B (browse) line command, type SHOWCMD ON on the Command line and press Enter. Then, enter the following line command in the **Line Command** field to the left of USER.TEST.DATA:

B /(MEMB1)

When you press Enter, the panel shown in Figure 91 on page 153 appears.

Data Set List Utility

Data Set Name. : USERID.PRIVATE.CLIST

Command before expansion:
M

Command after expansion:
====> M 'USERID.PRIVATE.CLIST'

The expanded command field shown above can be modified,
but the data set name field may not be changed for builtin commands.

Press ENTER key to process the command.
Enter END command to return without processing the command.

Command ====> _____
F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Figure 91. Data Set List Utility - SHOWCMD Panel (ISRUDSLS)

Notes:

1. The data set name and commands shown in Figure 91 are for illustrative purposes only. These values are determined by the command you enter and the data set acted on by that command.
2. SHOWCMD must be entered from a data set list. It is invalid if you use a line command, such as M, to display a member list before calling it.

When the panel showing the commands is displayed, you can do one of the following:

- Press Enter to call the command displayed in the **Command after expansion** field.
- Change the command displayed in the **Command after expansion** field and then press Enter to call the changed command.
- Enter the END command to return to the data set list display.

For information about using line commands, TSO commands, CLISTs, REXX EXECs, and the / character on a data set list display, see “Blank Display Data Set List” on page 128.

SORT Command

The SORT primary command sorts the data set list by the specified field. Use the following format:

SORT [*field1* [*field2*]]

where:

field1

The major sort field. If only one operand is used, ISPF treats it as *field1*. If both operands are used, ISPF sorts the list by *field1* first, then by *field2* within *field1*.

field2

The minor sort field.

Data Set List Utility (Option 3.4)

For example, to sort a data set list by volume and block size within each volume, use the following command:

```
SORT VOLUME BLKSZ
```

If you do not specify a field, ISPF sorts the list by data set name. The keywords described in Table 15 tell ISPF by which fields to sort the data set list.

Table 15. Sort Fields for Source Libraries

Field	Sequence	Description
NAME	Ascending	Data set name
MESSAGE	Ascending	Command completion message
VOLUME	Ascending	Volume serial
DEVICE	Ascending	Device type
DSORG	Ascending	Data set organization
RECFM	Ascending	Record format
LRECL	Descending	Logical record length
BLKSZ	Descending	Block size
TRACKS	Descending	Data set size
%USED	Descending	Percentage used
XT	Descending	Extents used
CREATED	Descending	Creation date
EXPIRES	Ascending	Expiration date
REFERRED	Descending	Last accessed data
MVOL	Ascending	Multivolume or migration level

Automatic scrolling is performed, if necessary, to bring the major sort field into view. ISPF displays a message when you enter a SAVE or SORT primary command that shows that the data needed to do the function is being retrieved. The keyboard locks when this message appears and stays locked until the SAVE or SORT command is completed.

SRCHFOR Command

Use the SRCHFOR primary command to search the data sets in the data set list for one or more strings of data using the SuperC Utility (see Option 3.14). You may limit the search to excluded or non-excluded data sets, and control whether migrated data sets are recalled and searched or not. Use the following format:

```
SRCHFOR string
```

The string parameter is optional and if specified is used to prefill the first search string on the subsequent DSLIST Srchfor Options panel.

WORD, SUFFIX, and PREFIX are available operands for search string specification. Note that the search strings are case sensitive and must match exactly as specified. Consider the 'Any case' process option if you want to disregard case.

You can use the C (continuation) operand to specify that both the current and previous string must be found on the same line to constitute a match. Otherwise, lines with either string are treated as matching.

Table 16.

Example Search strings:	Explanation:
====> ABC ====> EFG	Either string ABC or EFG may be found in the search data set.
====> ABC WORD ====> EFG C	The two strings (ABC and EFG) must be found on the same line. ABC must be a complete word, while EFG (a continuation definition) can be part of any word.
====> ABcD prefix	The string (ABcD) is detected if the case of each letter matches and it is a prefix of a word.
====> X'7b00'	The hex string is specified as the search string. The listing must be browsed with 'HEX ON'.
====> 'AB C'D'	The string (AB C'D) is specified.

To start the search, press the Enter key from the DSLIST Srchfor Options panel. To cancel the request and return to the Data Set List, enter END or CANCEL.

Output is in the listing DSN you specify and in the MESSAGE field in the DSLIST. Sort on this field to consolidate results.

VA, VS, VT, and VV Commands

The VA, VS, VT, and VV commands change the data set list display to the Attributes, Space, Total, and Volume views, respectively.

Reset ISPF Statistics Utility (Option 3.5)

When you select this option, a panel is displayed (Figure 92 on page 156) to allow you to create, update, or delete statistics and to reset sequence numbers. The Reset ISPF Statistics utility handles only partitioned data sets with fixed- or variable-length records and logical record length of:

- From 10–32 760, inclusive, for fixed-length records
- From 14–32 756, inclusive, for variable-length records.

For information about ISPF statistics, see the **ISPF Member Statistics** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*.

Reset ISPF Statistics Utility (Option 3.5)

A - A - 3270 Emulator

File Edit Transfer Settings Keyboard Help

Menu RefList Utilities Help

Reset ISPF Statistics

R Reset (create/update) ISPF statistics D Delete ISPF statistics

New Userid. (If userid is to be changed)

New Version Number . . . (If version number is to be changed)

SCLM Setting 3 1. SCLM 2. Non-SCLM 3. As is Enter "/" to select option

ISPF Library Project . . . USERID / Reset Mod Level

Group . . . PRIVATE / Reset Sequence Numbers

Type . . . SCRIPT / Reset Date/Time

Member . . . (Blank or pattern for member selection list, "*" for all members)

Other partitioned data set Data Set Name . . .

Volume Serial . . . (If not cataloged)

Data Set Password . . . (If password protected)

Option ---->

2B A 0-0

Figure 92. Reset ISPF Statistics Panel (ISRURSP)

Reset ISPF Statistics Panel Action Bar

The Reset ISPF Statistics panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
RefList	See the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral lists.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers the following choices: <ol style="list-style-type: none">1 General2 Why you might want to Reset ISPF statistics3 Filling in the reset utility panel4 Using the Member list6 ISPF statistics7 Appendices8 Index

Reset ISPF Statistics Panel Fields

All the fields on this panel are described in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except the following:

New UserID

This field is used to set the **ID** field in the statistics. Enter a new user ID here if you want to change the user ID the statistics are recorded under. It is required if you do not specify a new version number.

Reset ISPF Statistics Utility (Option 3.5)

If you are updating the user ID but not resetting the sequence numbers, the statistics are updated but the data is not scanned or renumbered.

New Version Number

Enter a number here if you want to change the version number. This field is required if you do not specify a new user ID when resetting statistics. It is ignored if you are deleting statistics.

Reset Mod Level

Use a slash to select this option and reset the modification level. Deselect this option if you do not want to reset the modification level. A new version number is required to reset the modification level.

Reset Sequence Numbers

Use a slash to select this option and reset the sequence numbers. Deselect this option if you do not want to reset the sequence numbers. A new version number is required to reset the sequence numbers. Only standard (STD) sequence numbers will be reset.

If the data is in packed format, there can be no sequence number processing. However, statistics for members in packed format can be created or updated if the sequence numbers are not being reset.

SCLM Settings

The SCLM setting is a bit that ISPF uses to determine what type of edit the file last had performed upon it.

1 SCLM

This bit is ON to specify that the last edit of this file was under SCLM control.

2 Non-SCLM

This bit is ON to specify that the last edit of this file was under control of something other than SCLM.

3 As-is

This bit is ON to specify that this copy operation transfers the current setting of this file as it already is.

Reset Date/Time

The setting of this field determines whether or not to reset the Last Modified Date or Time and the Creation Date of the file.

Reset Number of Lines

The setting of this field determines whether or not to reset the Current Number of Lines, the Initial Number of Lines, and the Number of Modified Lines settings. If this field is set ON, the Current Number of Lines and Initial Number of Lines settings are set to the actual number of lines of the member.

The Number of Modified Lines setting is dependent on the Reset Mod Level and Reset Sequence Numbers fields. If either of those are reset and the Reset Date/Time field is ON, then the value of the Number of Modified Lines is set to zero. Otherwise, the Number of Modified Lines remains as is.

Reset ISPF Statistics Utility Options

The following sections describe the options shown on the Reset ISPF Statistics panel.

Reset ISPF Statistics Utility (Option 3.5)

R — Reset (Create/Update) ISPF Statistics

Use option R either to create statistics in a library that does not currently have them, or to update statistics in a library.

The **New UseriD** field is optional for option R. If you specify a user ID, it is placed in the **ID** field of the statistics. If you leave the **New UseriD** field blank and select a member without statistics, the **ID** field of the statistics is set to the current user ID.

Either a new user ID or a new version number is required when you use this option. When you specify a version number, the statistics are created or reset as follows:

Version Number	Set to the specified value.
Modification Level	Set to zero if requested; otherwise, unchanged.
Creation Date	Set to current date in the national format.
Change Date	Set to current date, in the national format, and time.
Current No. Lines	Set to the current number of data records.
Initial No. Lines	Set to the current number of data records.
No. Modified Lines	Set to zero if the Reset Sequence Numbers field is selected.

If you have requested updating of the modification level and resetting of the sequence numbers, the last two digits of each sequence number are set to zeros. Otherwise, they are not changed.

If you have requested updating of sequence numbers, the data is scanned to determine if valid, ascending sequence numbers are present in all records. If so, the data is renumbered. Otherwise, the data is assumed to be unnumbered and renumbering is not done.

D — Delete ISPF Statistics

Use option D to delete ISPF statistics for an ISPF library or other partitioned data set. The **New UseriD** and **New Version Number** fields are ignored when you use option D.

Results of Resetting Statistics

What you specify for the **New Version Number**, **Reset Mod Level**, and **Reset Sequence Numbers** fields controls the resetting of the sequence numbers, the modification flags within the data, and the statistics. A new version number is required to reset the modification level and sequence numbers. Therefore, if a new version number is entered and the data is not in packed format, Table 17 shows the various combinations you can use for the **Reset Mod Level** and **Reset Sequence Numbers** fields and the results of those combinations.

Table 17. *Reset Mod Level and Reset Sequence Numbers Combinations*

	Reset Mod Level <i>Selected</i>	Reset Mod Level <i>Deselected</i>
Reset Sequence Numbers <i>Selected</i>	RESET	MOD FLAGS=UNCHANGED SEQ #s=RESET
Reset Sequence Numbers <i>Deselected</i>	Unchanged	Unchanged

Hardcopy Utility (Option 3.6)

The Hardcopy utility allows you to specify a sequential data set or a member of a partitioned data set to be printed, and the destination of the output. It also allows you to specify whether or not a sequential data set is to be kept or deleted after printing. Partitioned data set members are always kept.

You can use the Hardcopy utility to print any DASD-resident data set except ISPF list and log data sets; use the ISPF LIST command to print log and list data sets during an ISPF session.

An optional print utility exit can be specified by your installation. If this exit is installed, it may cause the Hardcopy utility's response to differ from the following descriptions. Refer to *ISPF Planning and Customizing* for more information about the print utility exit.

Another factor that can affect the Hardcopy utility's performance is whether or not the TSO/E Information Center Facility is installed. If the TSO/E Information Center Facility is installed, your installation can optionally allow ISPF to display a panel for submitting TSO/E Information Center Facility information with the print request. See "Using the TSO/E Information Center Facility" on page 162 for more information.

If the TSO/E Information Center Facility is not installed, the Hardcopy utility first displays the panel shown in Figure 93.

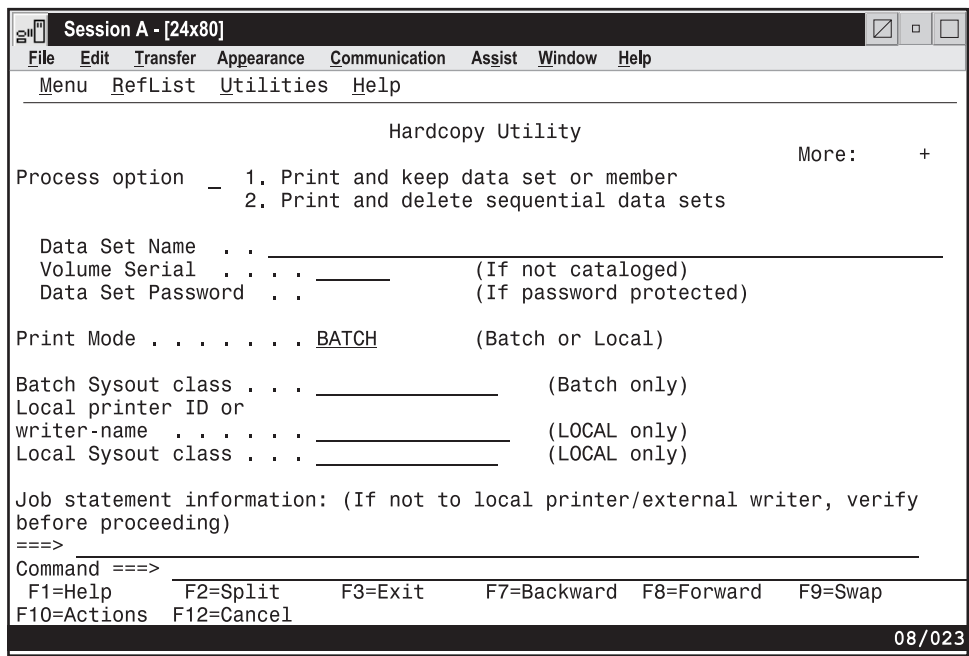


Figure 93. Hardcopy Utility Panel - before JCL Generation (ISRUHCP)

Hardcopy Utility Panel Action Bar

The Reset ISPF Statistics panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Hardcopy Utility (Option 3.6)

RefList	See the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral lists.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers the following choices: <ol style="list-style-type: none">1 General2 Function of the hardcopy utility3 Selecting a print mode4 Submitting a background job to print a data set or member5 Routing a data set to a printer local to your terminal group6 Printing a data set using TSO/E Information Center Facility7 Appendices8 Index

Hardcopy Utility Panel Fields

The **Data Set Name**, **Volume Serial**, **Data Set Password**, and **Job statement information** fields, shown in Figure 93 on page 159, are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*. The other fields on the panel are:

Print Mode

Lets you specify one of the following print modes:

BATCH

Submits your print request as a background job.

LOCAL

Routes your data to a local printer, such as an IBM 328x printer that is connected to your terminal group.

Batch Sysout Class

Destination of printed data set. Used only if the data set is to be printed and Batch SYSOUT class is specified.

Local Printer ID or Writer name

Destination of printed data set. Used only if the data set is to be printed and Local Printer ID or external writer name is specified.

Note: If you specify a Local Printer ID or writer name and you have selected the Edit PRINTDS Command option on the ISPF Settings panel (option 0), ISPF displays the Local Print Command Edit panel to allow you to intercept and edit the PRINTDS command before it processes. See the **Editing the PRINTDS Command** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for additional information.

Local Sysout Class

Used in conjunction with the Local Printer ID or Writer Name. Specifies the output class to use for output processing.

Generating and Submitting JCL

Follow these steps to generate and submit JCL for your print jobs:

1. Choose one of the options listed at the top of the panel and type its code, **1** (for PK) or **2** (for PD), in the **Option** field.

Hardcopy Utility (Option 3.6)

2. Specify a fully qualified data set name and member name.
This is a required field. If you are entering a fully qualified TSO data set name, you must enclose the name in quotes. If you omit the quotes, the data set prefix from your TSO user profile is automatically added to the beginning of the data set name.
3. If the data set is not cataloged, specify the volume serial.
4. If your data set is password protected, type the password in the **Data Set Password** field. See the **Data Set Passwords** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.
5. Specify either BATCH or LOCAL in the **Print Mode** field.
6. Specify one of the following:
 - If you chose BATCH in the previous step, type a Batch SYSOUT class and any job statement information you need.
 - If you chose LOCAL in the previous step, type the name of a local printer or writer name in the **Local Printer ID** field. Job statement information is ignored.
7. Press Enter.
What happens next depends on your choice in step 5. If you chose BATCH, see step 7a. If you chose LOCAL, see step 7b on page 162.
 - a. If you chose BATCH, ISPF generates the JCL and displays the panel shown in Figure 94, with the message JCL generated in the upper-right corner.

```

Session A - [24x80]
File Edit Transfer Appearance Communication Assist Window Help
Menu RefList Utilities Help

Hardcopy Utility JCL generated
More: +

Process option 1 1. Print and keep data set or member
                2. Print and delete sequential data sets
                3. Exit without submitting job

Enter End command to submit job.

Data Set Name   . . 'P020136.PRIVATE.PANELS(A)'
Volume Serial   . . . . . (If not cataloged)
Data Set Password . . . . . (If password protected)

Batch Sysout class . . . A
Print Mode . . . . . BATCH (Batch or Local)
Local printer ID or
writer-name . . . . .
Local Sysout class . . .

Job statement information:
Command ==>
F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel

11/023
  
```

Figure 94. Hardcopy Utility Panel - after JCL Generation (ISRUCJJP)

At this point you can either:

- Cancel the job by typing the CANCEL command in the **Option** field and pressing Enter.
- Submit the job by typing the END command and pressing Enter. ISPF displays the following message at the bottom of the panel:

```

IKJ56250I JOB useridA(JOBnnnnn) SUBMITTED
***
  
```

Hardcopy Utility (Option 3.6)

Press Enter. For more information about BATCH printing, see Additional Batch Printing Information.

- Specify another data set name for printing.
- b. If you chose LOCAL, ISPF calls the PRINTDS TSO command processor to print the data set on the specified local printer.
A message is displayed in the short message area to show that PRINTDS has accepted the request. At this point, you can:
 - Specify another option and press Enter
 - Enter the END command
 - Enter the CANCEL command
- 8. If you entered CANCEL or END, ISPF determines the next panel you see as follows:
 - If you entered the Hardcopy utility from the ISPF Primary Option Menu or through the jump function (=), ISPF displays the ISPF Primary Option Menu.
 - If you entered the Hardcopy utility from the Utility Selection Panel, ISPF returns you to that panel.

Additional Batch Printing Information

When you enter the desired information and press Enter, ISPF generates JCL that contains the job statement operands and a job step that prints the specified data set, using the IBM IEBGENER utility.

Notes:

1. IEBGENER does not support packed data. If you try to print packed data, you may get unwanted results. IEBGENER prints the data set one logical record per print line. If the logical record length is greater than the printer width, the logical record is truncated.
2. ISPF does not unpack data automatically before printing it. Therefore, if you need to unpack data before printing it, edit the data set and enter the PACK primary command with the OFF operand. Refer to *ISPF Edit and Edit Macros* for more information about the PACK command.

Once the JCL for the first job step is generated, the job statement operands are shown for information only. They are no longer highlighted and you cannot type over them, since the job statement has already been generated. You can then select another data set name to cause another job step to be generated.

Using the TSO/E Information Center Facility

If the TSO/E Information Center Facility is installed, your installation can allow ISPF to display the panel shown in Figure 95 on page 163.

Hardcopy Utility

Process option _ 1. Print and keep data set or member
2. Print and delete sequential data set

Data Set Name
Volume Serial (If not cataloged)
Data Set Password . . (If password protected data set)

Printer location . .
Printer format . . .
Number of copies . .

Command ==>
F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Figure 95. Hardcopy Utility Panel - with the TSO/E Information Center Facility Installed (ISRUHCPI)

Follow these steps to use the TSO/E Information Center Facility to submit your print jobs:

1. Choose one of the options listed at the top of the panel and type its code, PK or PD, in the **Option** field.
2. Enter a fully qualified data set name and member name.
You must specify at least the low-level qualifier, such as LIST. If you enter your user prefix as part of the data set name, you must enclose the complete data set name in quotes. However, if you omit the user prefix and quotes, your user prefix is automatically added to the beginning of the data set name.
3. If the data set is not cataloged, enter the volume serial.
4. If your data set is password-protected, enter the password in the **Data Set Password** field. See the **Data Set Passwords** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.
5. You can either leave the **Printer location** field blank or enter the location ID of the printer to be used. The location ID is assigned by your installation.
You can also enter a partial location name followed by an asterisk (*).
6. You can either leave the **Printer format** field blank or enter the format ID of the printer to be used. The format ID is assigned by your installation.
You can also enter a partial format name followed by an asterisk (*). If your printer location and format entries do not identify a specific printer, a printer selection list is displayed. From this list, which is similar to a member selection list, you can select a printer.
7. Specify the number of copies you want.
8. Press Enter.

The values entered in the fields on this panel are passed directly to the TSO/E Information Center Facility for processing.

Download Data Set to Workstation Utility (Option 3.7)

The Download Data Set to Workstation Utility assists you in installing the ISPF Workstation Agent software on the supported software configurations.

Critical Information

It is very important that you review the information in the appendix called **Installation Considerations for the Client/Server** that is found in the *ISPF User's Guide Volume I* before you attempt to use this utility to install the ISPF C/S. This Appendix contains information on the following topics:

- Assumptions
- Required Hardware and Software
- Configuration Parameters
- GUI Mode CLIST or STARTUP procedure.
- The Workstation Agent Install Program window

When you select option 7 from the Utility Selection Panel, ISPF displays the Download Data Set to Workstation panel shown in Figure 96.

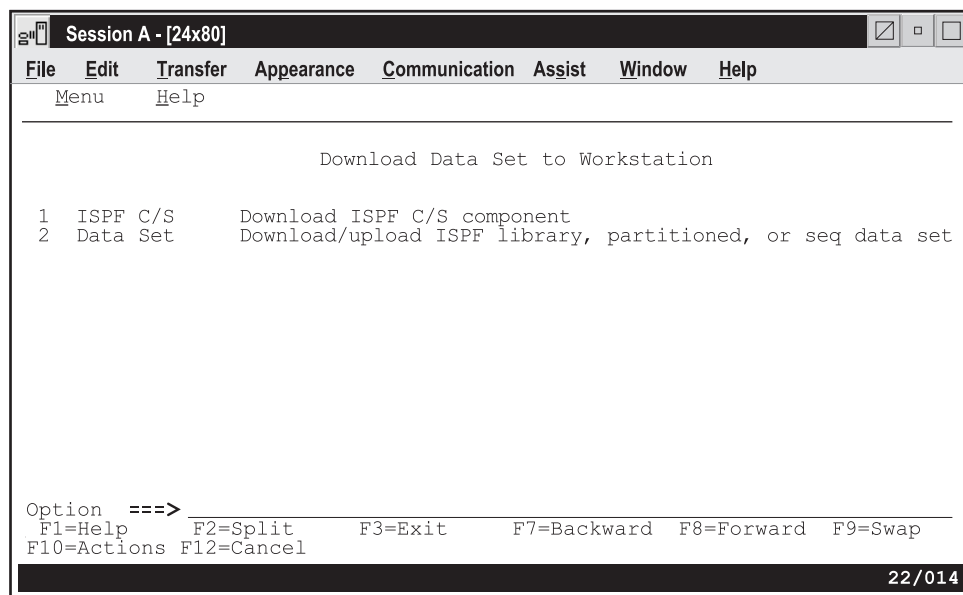


Figure 96. Download Data Set to Workstation Utility Panel (ISPUDL)

Selection 1 — ISPF C/S

This option enables you to download the ISPF Workstation Agent (WSA) component installation program to your desktop workstation. After downloading the WSA and installing it, you can use ISPF on an OS/390 host through GUI windows on your workstation. When you select option 1 from the Download Data Set to Workstation panel, *ISPF C/S*, ISPF displays the ISPF Client/Server Component Download panel shown in Figure 97 on page 165.

Download Data Set to Workstation Utility (Option 3.7)

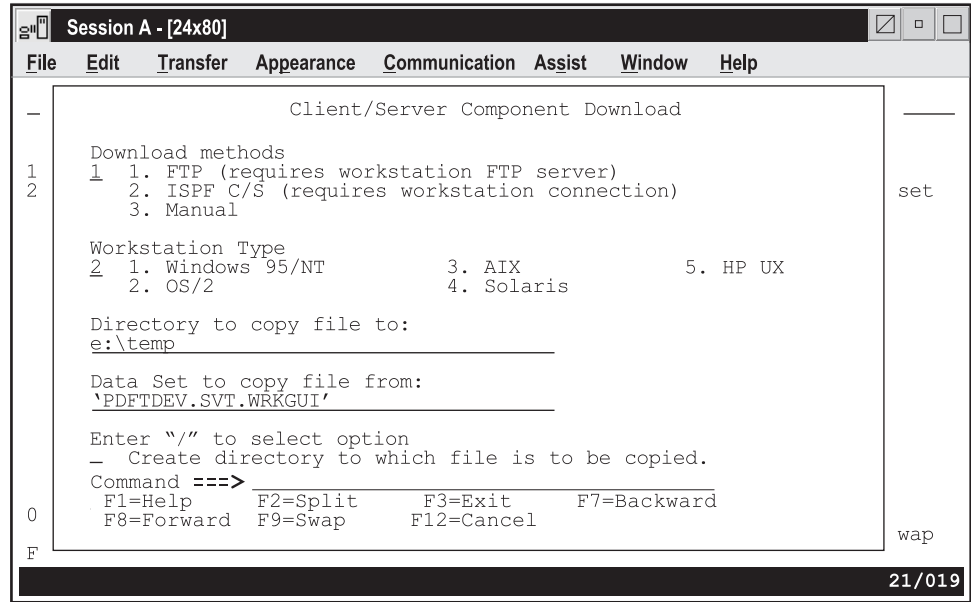


Figure 97. ISPF Client/Server Component Download Panel (ISPWSD01)

The *Client/Server Component Download* panel enables you to choose the download method and workstation type you want to use to put the WSA installation program on your desktop.

You have three choices for downloading the workstation agent installation program.

FTP (requires workstation FTP server)

Download using FTP. ISPF invokes the host FTP client to connect with the FTP server on your workstation and transfer the WSA installation program.

ISPF C/S (requires workstation connection)

Download using ISPF Client/Server. If you already have a workstation agent installed on your workstation, you can use the built-in file transfer services to download a new WSA installation program. The file should be downloaded in binary format.

Manual

ISPF tells you the name of the file you need to copy. You can copy it with any method you prefer as long as you maintain the data integrity of the WSA installation program. The file must be downloaded as "binary".

You also use the Client/Server Component Download panel to specify the type of workstation environment you want to use the WSA in. You must indicate whether you want the WSA to run in Windows 95/98/2000 or NT, OS/2, AIX, Solaris, or HP UX. You make this choice by typing the appropriate number in the *Workstation Type* entry field.

To complete any download, you must specify where you want to copy a file to, and which file you want to copy from. The *Directory to copy file to:* entry field on the download panel is where you enter the path and directory name of the directory that you want to use to store the WSA installation program on your workstation. You can specify a specific directory, or leave this field blank. If you leave it blank, the download is made to your home directory (in the case of FTP downloads) or the current directory (in the case of client/server downloads). If

Download Data Set to Workstation Utility (Option 3.7)

you specify a relative directory (one that does not specify a leading slash) the directory is relative to the FTP home directory or the client/server current directory.

You can download into an existing directory, or you can have ISPF create the directory you specify on the panel. If you want ISPF to create the directory on your workstation before copying the WSA installation program, select the field next to *Create directory to which the file is to be copied*.

The *Data set to copy file from*: entry field is where the host data set that contains the WSA installation program is entered. This field value varies depending on the naming convention that was used when ISPF was installed.

File Transfer Protocol (FTP) Download

When you select choice 1 **FTP (requires workstation FTP server)** under *Download methods* on the ISPF Client/Server Component Download panel, ISPF displays the ISPF Client/Server Installation Notice panel shown in Figure 98.

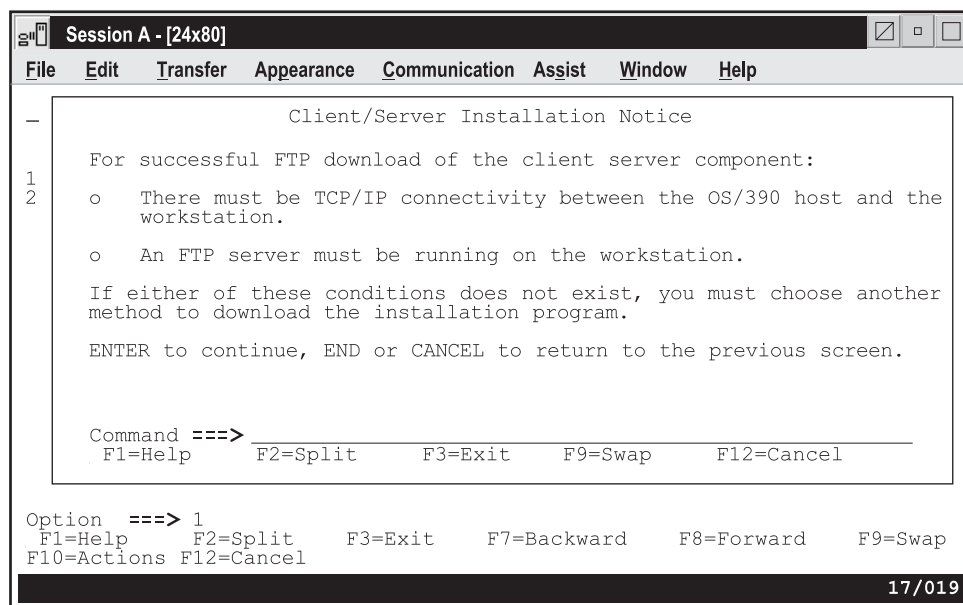


Figure 98. ISPF Client/Server Installation Notice (ISPWSD02)

This panel is a reminder to you that certain conditions must be present for you to use the FTP download method. Aside from the two specific conditions mentioned on the panel, you must also ensure that:

- the path specified has write access (review your TRUSERS file)
- you have read access to the MVS data base where the ISPF Client/Server Component is stored
- the directory where you want to copy the component exists, OR you have selected the "Create directory" option

When you press Enter, ISPF displays the panel shown in Figure 99 on page 167.

Download Data Set to Workstation Utility (Option 3.7)

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Client/Server Component Download

Enter the following information to download the ISPF Client/Server Component via FTP:

1
2

IP Address or Host Name to OPEN:
123.45.67.89

User to login: (Case sensitive)

Password for login: (Case sensitive)

Enter "/" to select option
/ Browse FTP output only if an error occurs.

Command ===>

F1=Help F2=Split F3=Exit F7=Backward F8=Forward
F9=Swap F12=Cancel

11/006

Figure 99. Second Client/Server Component Download Panel (ISPWSD04)

Fill in the fields on this panel as follows:

IP Address or Host Name to OPEN

The dotted IP address or name of the workstation ID you want to copy the ISPF Workstation Agent installation program to.

User to login

This is the file transfer protocol (FTP) user name that must have write access to the directory where the ISPF Workstation Agent code will be installed. This name is case sensitive.

Password for login

This is the password for the user ID you want to use at the FTP server. You can leave this field blank if the user id is "anonymous", but be aware that most FTP servers expect a password, even if only an e-mail address.

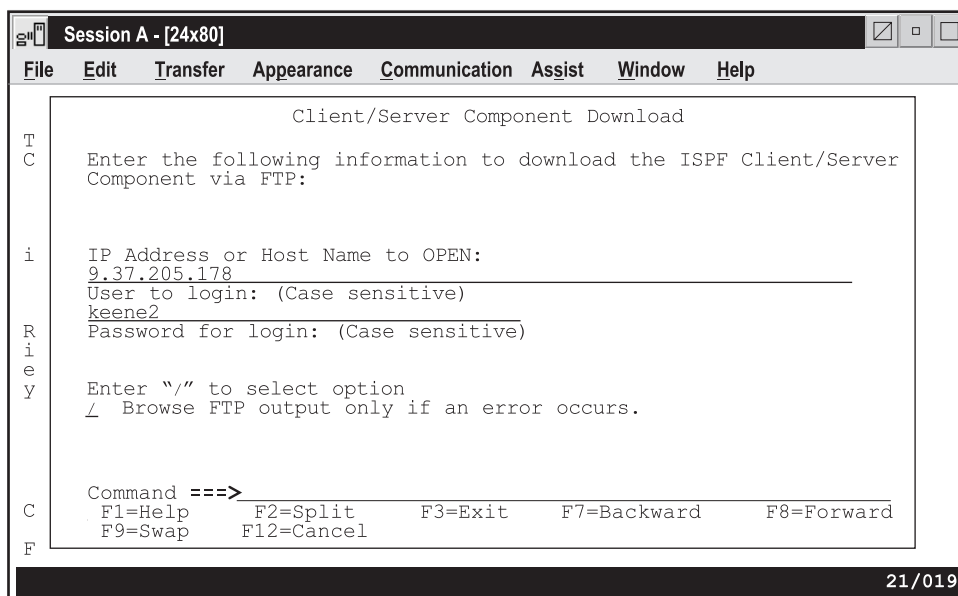
Browse FTP output only if an error occurs

You can choose to display FTP output only if something wrong happens. Select the entry field to have this option active. If you do not choose this option, ISPF displays *all* output from the FTP transfer.

Press Enter to process this panel. If you chose not to override the ISPF default concerning display of FTP output, your screen will now show that output. If you chose to browse the FTP output only if an error occurs, and there is an error, the error information is displayed. If no error occurred, you proceed to the next download panel.

After a successful FTP download, the following panel appears on your screen, telling you to complete the installation from your workstation.

Download Data Set to Workstation Utility (Option 3.7)



The image shows a terminal window titled "Session A - [24x80]" with a menu bar (File, Edit, Transfer, Appearance, Communication, Assist, Window, Help). The main text area displays the "Client/Server Component Download" panel. It prompts the user to enter information for downloading the ISPFS Client/Server Component via FTP. The input fields show "9.37.205.178" for IP Address or Host Name to OPEN, "keene2" for User to login, and a blank field for Password for login. A note indicates to enter "/" to select option and to browse FTP output only if an error occurs. At the bottom, a command line shows "Command ==>" followed by function key shortcuts: F1=Help, F2=Split, F3=Exit, F7=Backward, F8=Forward, F9=Swap, and F12=Cancel. The status bar at the bottom right shows "21/019".

```
Client/Server Component Download

Enter the following information to download the ISPFS Client/Server
Component via FTP:

IP Address or Host Name to OPEN:
9.37.205.178
User to login: (Case sensitive)
keene2
Password for login: (Case sensitive)

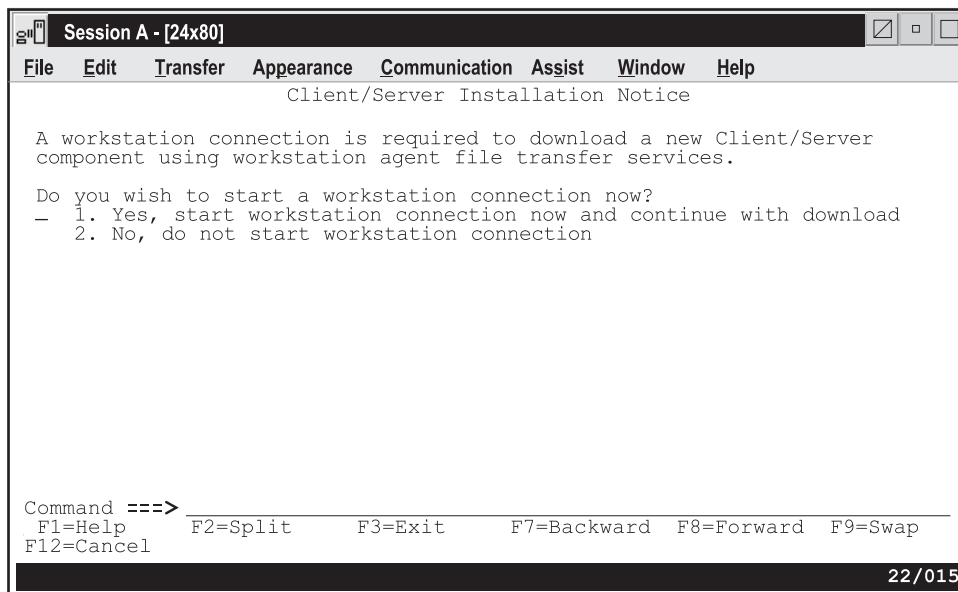
Enter "/" to select option
/ Browse FTP output only if an error occurs.

Command ==>
F1=Help      F2=Split    F3=Exit     F7=Backward  F8=Forward
F9=Swap      F12=Cancel
```

Figure 100. ISPFS Client/Server Component Install Program Panel (ISPWSD07)

ISPFS Client/Server (C/S) Download

When you select choice 2 **ISPFS C/S (requires workstation connection)** under *Download methods* on the ISPFS Client/Server Component Download panel, you want to use the ISPFS Client/Server method of downloading. If you do not already have a GUI connection (with or without display) established, ISPFS displays the ISPFS Client/Server Installation Notice panel shown in Figure 101.



The image shows a terminal window titled "Session A - [24x80]" with a menu bar (File, Edit, Transfer, Appearance, Communication, Assist, Window, Help). The main text area displays the "Client/Server Installation Notice" panel. It states that a workstation connection is required to download a new Client/Server component using workstation agent file transfer services. It asks if the user wishes to start a workstation connection now and provides two options: 1. Yes, start workstation connection now and continue with download; 2. No, do not start workstation connection. At the bottom, a command line shows "Command ==>" followed by function key shortcuts: F1=Help, F2=Split, F3=Exit, F7=Backward, F8=Forward, F9=Swap, and F12=Cancel. The status bar at the bottom right shows "22/015".

```
Client/Server Installation Notice

A workstation connection is required to download a new Client/Server
component using workstation agent file transfer services.

Do you wish to start a workstation connection now?
- 1. Yes, start workstation connection now and continue with download
  2. No, do not start workstation connection

Command ==>
F1=Help      F2=Split    F3=Exit     F7=Backward  F8=Forward  F9=Swap
F12=Cancel
```

Figure 101. ISPFS Client/Server Installation Notice (ISPWSD03)

This panel is a reminder that you must have a client/server connection to use this download method, and it also enables you to start a workstation connection directly from the panel. This assumes, of course, that you have a previous copy of

Download Data Set to Workstation Utility (Option 3.7)

the WSA installed on your workstation. If this is the first time you are downloading the WSA, use the FTP or Manual methods of downloading, instead.

For the ISPF Client/Server method to work, you must have either TCP/IP or APPC connectivity, or both, between the OS/390 host and the workstation. Again, if this condition is not met, choose either the FTP or Manual method of downloading.

If you have a GUI connection (for example, a previous version of ISPF WSA) and you select this download method, the Client/Server transfer service is invoked to copy the WSA installation program to your workstation. A successful transfer results in the following panel.

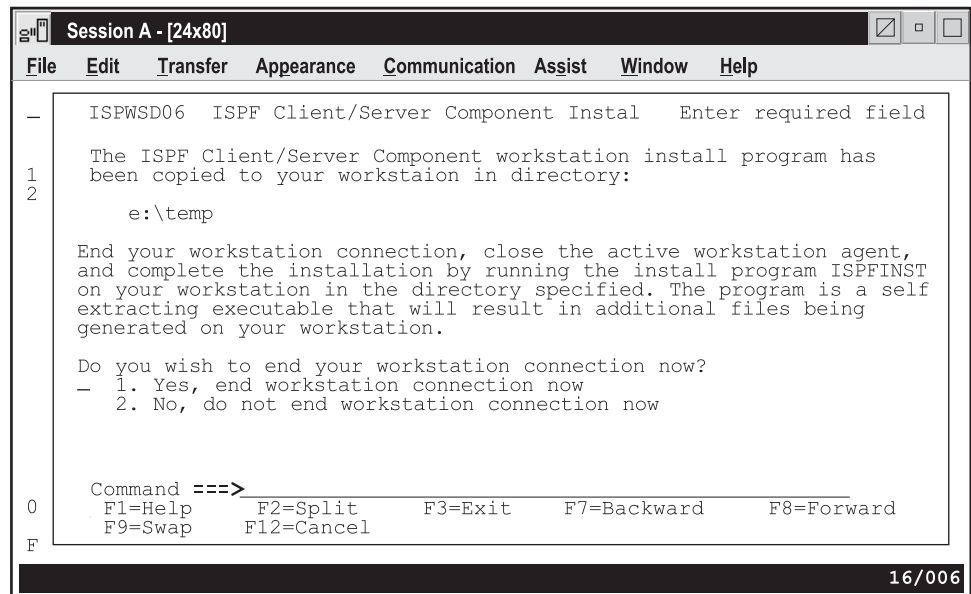


Figure 102. ISPF Client/Server Component Install Program Panel (ISPWSD06)

Manual Download

When you select choice 3 **Manual** under *Download methods* on the ISPF Client/Server Component Download panel, you want to use your own preferred download method. ISPF displays a panel of instructions necessary for you to do this, as shown in Figure 103 on page 170.

Download Data Set to Workstation Utility (Option 3.7)

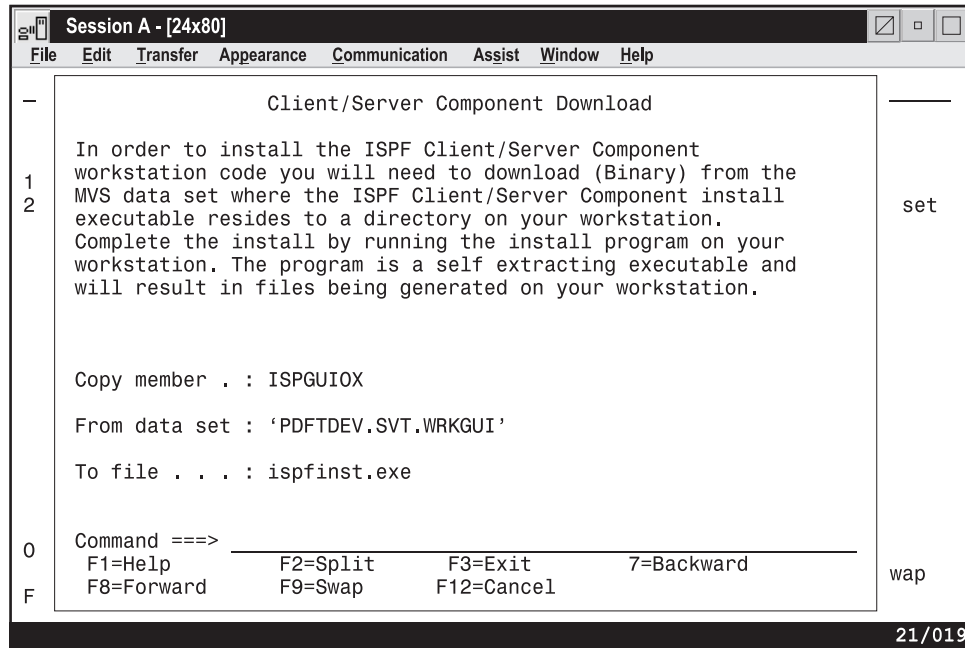
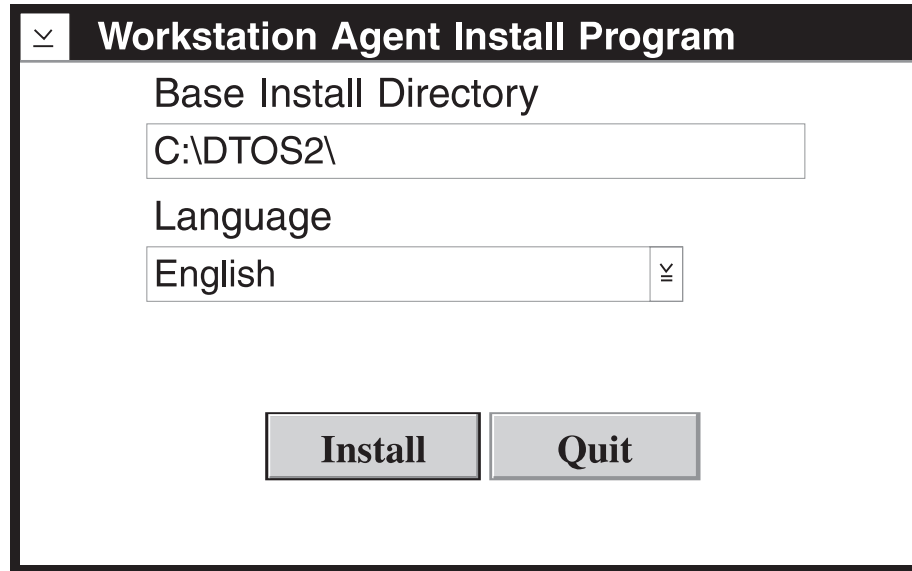


Figure 103. Client/Server Component Download Panel (ISPWSD05)

Running the Installation Program (ISPFINST)

After you have downloaded the Workstation Agent Installation program, resume the installation by running the program called ISPFINST.EXE (ispfinst on UNIX platforms). This is a self-extracting executable program that generates additional necessary files on your workstation. Follow this procedure:

1. Go to a command line.
2. Change to the directory to which you downloaded the ISPF C/S workstation code. (For AIX, Solaris, and HP UX, use the **chmod** command to give the file execute permission).
3. Enter ISPFINST.
4. A dialog box called Workstation Agent Install Program is displayed.



A Base Install Directory and a national language (such as English) are displayed in this box. Be sure this is the Base Install Directory and the national language that you want to use for the installation of ISPFINST. If the directory is incorrect, type in the correct directory name. If the language is incorrect, scroll down the list of languages and pick the one that is correct. Press Enter or select the Install push button.

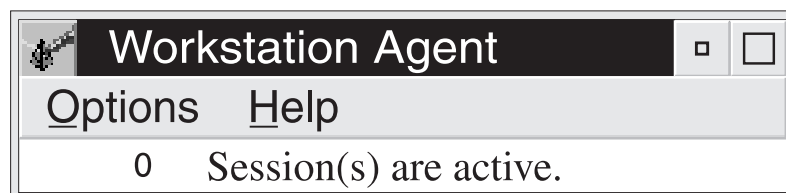
5. WSA.EXE, along with several other files, is created in the Base Install Directory that you specified. (For AIX and HP UX, the executable file, called **wsa**, is created.)
6. A final dialog box will appear, instructing you to be sure that the name of the Base Install Directory is in your libpath (or for AIX and HP UX, the PATH environment variable), select OK to remove it from the screen.
7. If the Workstation Agent Install Program dialog box still appears on your screen, select **Quit** to remove it from your display.

Starting an ISPF C/S Session (OS/2)

To start an ISPF C/S session, follow this procedure:

1. Start the ISPF C/S component (OS/2):
 - a. Go to an OS/2 command line.
 - b. Change to the directory to which you downloaded the ISPF C/S workstation agent code.
 - c. Enter WSA or START WSA.

The Workstation Agent window will be displayed on your workstation:



This window represents the executing ISPF C/S workstation program. You can minimize this window. For more information about this window, see "The Workstation Agent Window" on page 174.

Download Data Set to Workstation Utility (Option 3.7)

Note: If you do not close this window after you end the ISPF C/S session, you will not have to repeat step one to start another ISPF C/S session; that is, as long as the ISPF C/S component has been started, you can begin this start-up procedure at step two.

2. Switch to an Emulator session and log on to TSO/ISPF.
3. You can start a GUI session in one of the following ways:
 - Issue the ISPSTART command with the GUI parameter (see the **Details for Dialog Developers Writing GUI Panels** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I*, and refer to the *ISPF Dialog Developer's Guide and Reference* for additional information about the ISPSTART command). For example:

```
ISPSTART GUI(IP:9.67.229.115)
```

starts ISPF in GUI mode for the specified workstation.

- Select **Start GUI Session** on the Initiate GUI Session panel (option 0). See "Workstation Connection" on page 44 for additional information.
- Issue the WSCON command from any command line to display the *Initiate Workstation Connection* panel. See the **ISPF System Commands** table of the *Using Commands, Function Keys, and Light Pen or Cursor Selection* chapter of the *ISPF User's Guide Volume I* for more information.
- Call the WSCON service. Refer to the *ISPF Services Guide* for more information.

Starting an ISPF C/S Session (Windows)

To start an ISPF C/S session, follow this procedure:

1. Start the ISPF C/S component (Windows):
 - a. Go to an MS/DOS command line.
 - b. Change to the directory to which you downloaded the ISPF C/S workstation agent code.
 - c. Enter WSA.
2. Switch to an Emulator session and log on to TSO/ISPF.
3. You can start a GUI session in one of the following ways:
 - Issue the ISPSTART command with the GUI parameter (see the **Details for Dialog Developers Writing GUI Panels** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I*, and refer to the *ISPF Dialog Developer's Guide and Reference* for additional information about the ISPSTART command). For example:

```
ISPSTART GUI(IP:9.67.229.115)
```

starts ISPF in GUI mode for the specified workstation.

- Select **Start GUI Session** on the Initiate GUI Session panel (option 0). See "Workstation Connection" on page 44 for additional information.
- Issue the WSCON command from any command line to display the *Initiate Workstation Connection* panel. See the **ISPF System Commands** table of the *Using Commands, Function Keys, and Light Pen or Cursor Selection* chapter of the *ISPF User's Guide Volume I* for more information.
- Call the WSCON service. Refer to the *ISPF Services Guide* for more information.

Starting an ISPF C/S Session (UNIX — AIX, HP, Solaris)

To start an ISPF C/S session, follow this procedure:

1. Start the ISPF C/S component (UNIX):

Download Data Set to Workstation Utility (Option 3.7)

- a. Go to the UNIX command line.
 - b. Change to the directory to which you downloaded the ISPF C/S workstation agent code.
 - c. Enter WSA.
2. Switch to an Emulator session and log on to TSO/ISPF.
 3. You can start a GUI session in one of the following ways:
 - Issue the ISPSTART command with the GUI parameter (see the **Details for Dialog Developers Writing GUI Panels** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I*, and refer to the *ISPF Dialog Developer's Guide and Reference* for additional information about the ISPSTART command). For example:

```
ISPSTART GUI(IP:9.67.229.115)
```

starts ISPF in GUI mode for the specified workstation.
 - Select **Start GUI Session** on the Initiate GUI Session panel (option 0). See “Workstation Connection” on page 44 for additional information.
 - Issue the WSCON command from any command line to display the *Initiate Workstation Connection* panel. See the **ISPF System Commands** table of the *Using Commands, Function Keys, and Light Pen or Cursor Selection* chapter of the *ISPF User's Guide Volume I* for more information.
 - Call the WSCON service. Refer to the *ISPF Services Guide* for more information.

Ending an ISPF GUI Session

To end an ISPF GUI session, do one of the following:

1. Terminate the ISPF session as you normally would.
2. Enter the WSDISCON command (see the **ISPF System Commands** table of the *Using Commands, Function Keys, and Light Pen or Cursor Selection* chapter of the *ISPF User's Guide Volume I*).
3. Select the *Disconnect from the workstation* menu option (see “Disconnect from the Workstation” on page 52).

Notes:

1. You do not have to close the ISPF C/S component window.
2. You can use this window for multiple ISPF emulator sessions.
3. (For AIX) Use x resources to customize your ISPF C/S application. You can customize such things as background color and fonts. In this example, the first line defines the background color and the second line sets the font globally.

```
DtProcess*background:    gray
DtProcess.dtFont:        Rom14.500
```
4. (For HP UX) Use the .Xdefaults file to customize your ISPF C/S application. This file is in your \$HOME directory. You can customize such things as background color and fonts. Note that the fonts must be either MONospaced or CharCell type. Any other type of font causes unexpected spacing. Refer to your X Protocol reference materials for more information about customizing your applications. In this example, the first line defines the background color and the second line sets the font globally.

```
DtProcess*background:    gray
DtProcess.dtFont:        Rom14.500
```
5. In Motif applications, the PF10 key highlights the first item of a menu bar and enables you to traverse the bar. This is the equivalent of the Actions system command used by ISPF. When running the ISPF C/S, PF10 can be accelerated so this behavior is moved to the Pause key. We recommend that you use the Pause key instead of the Actions command, because the Pause key does not cause a host interrupt, thus improving performance.

Download Data Set to Workstation Utility (Option 3.7)

The Workstation Agent Window

The Workstation Agent (WSA) window appears when you have prepared your workstation to make a connection to the host, by downloading and executing the workstation portion of the Client/Server software.

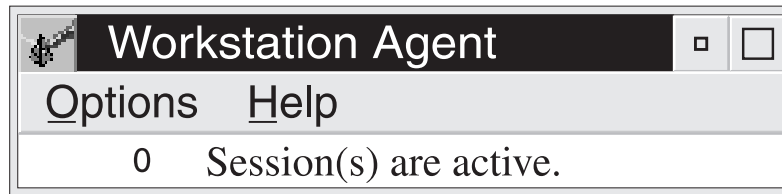


Figure 104. The Workstation Agent window

The functions available from the **Options** pull-down menu on the Workstation Agent window are:

Information

Displays the ISPF WSA Information dialog window. The Information dialog shows you the number of active sessions. Each active session represents a connection between the ISPF Client/Server workstation agent and an ISPF host. The dialog also indicates which communications interfaces (such as TCP/IP or APPC) have been initialized on the workstation, and the TCP/IP Port Number, or APPC Transaction Program (TP) Name. Additionally, the WINSOCK Path, if required, is shown in this dialog. The WINSOCK Path is applicable to Windows environments only.

Enable TCP/IP

This selection toggles between active and inactive when you click on it. The change does not take affect until you restart the Workstation agent.

Enable APPC

This selection toggles between active and inactive when you click on it. The change does not take affect until you restart the Workstation agent.

Set TCP/IP Port

Displays the ISPF Client/Server Configuration dialog. The Configuration dialog enables you to change the TCP/IP port number. From a TCP/IP perspective, the port number represents the ISPF Client/Server Workstation Agent. If a port number is not specified in the Configuration dialog, the default ISPF Client/Server port number is used.

If you specify a port number, the change takes effect after the ISPF Client/Server Workstation Agent is closed and restarted. The change remains in effect for subsequent invocations of the ISPF Client/Server Workstation Agent. If you later decide to change back to the ISPF Client/Server default port number, delete the port number in the Configuration dialog and restart the ISPF Client/Server Workstation Agent.

If you change the port number, you must also change the port number specified in the ISPF GUI initialization.

Set SNA TP Name

Displays the ISPF Client/Server Configuration dialog. The Configuration dialog enables you to change the SNA Transaction Program name. From an SNA APPC perspective, the TP name represents the ISPF Client/Server Workstation Agent.

If specified, the name is used to construct the names of the two transaction programs required to support an ISPF Client/Server connection. The ISPF

Download Data Set to Workstation Utility (Option 3.7)

Client/Server function appends different single alphabetic characters to the supplied name to form the actual names of the two APPC transaction programs. The character **S** is appended to the name selected to indicate the *send* conversation TP name used on the workstation and host, and the character **R** is appended to the name to indicate the *receive* conversation TP name.

This option is available if your workstation operating system is OS/2 or Windows APPC. For all other operating systems this option is disabled.

If a TP name is not specified in the Configuration dialog, the default ISPF Client/Server TP name is used. If you specify a TP name, the change takes effect after the ISPF Workstation Agent is closed and restarted. The change remains in effect for subsequent invocations of the ISPF Workstation Agent. If you later decide to change back to the ISPF Client/Server default TP name, delete the TP name in the Configuration dialog and restart the ISPF Workstation Agent.

If you change the TP name, you must also change the TP name specified in the ISPF GUI initialization.

Set WINSOCK Path

This option enables you to specify an explicit path to the socket DLL used by the active TCP/IP subsystem in a Microsoft Windows workstation environment. The specification of an explicit path overrides the default DLL search order for Windows.

For example, if the desired DLL is located in directory D:\TCPDOS\BIN then the path would be specified as follows:

D:\TCPDOS\BIN

The setting takes effect after the ISPF Client/Server workstation agent is closed and restarted. The setting remains in effect for subsequent invocations of the ISPF workstation agent.

This option is only available in a Microsoft Windows environment. For other operating systems this option is disabled.

Set Font

This option enables you to specify the font of your connection through the Workstation Agent window. When you choose **Set font...** from the Options pull-down, the Font dialog window appears. Choose from one of the available fonts and sizes that appear in the list. The list of fonts shows the fonts that are registered with your operating system. The change takes place after you re-start the agent, and effects all text in the interface windows except the menu bar and title bar text.

Because ISPF has designed the layout of the data within a workstation panel based on row and column positions, we recommend that if you change the font, you should use a non-proportional (that is, a fixed width or monospaced) font. Using a non-proportional font ensures that the data within the panels lines up correctly. If you choose to use a proportional font, data within columns might not align correctly.

Note: If you are using an AIX platform, you can change the font of the Workstation Agent by entering the following in your **.Xdefaults** file:

DtProcess*dtFont: . For example,

DtProcess*dtFont: fixed

Download Data Set to Workstation Utility (Option 3.7)

gives you a fixed font for the Workstation Agent application. However, this setting is overridden when you use the **Set Font** option on the Workstation Agent window.

System Register

This option enables you to bypass the Workstation Agent connection panel when you make a client/server connection. Choosing this function on the **Options** pull-down on the Workstation Agent window causes the **System Register** panel to display.

The System Register Panel: Figure 105 shows the System Register panel that appears when you select **System Register** from the Options pull-down on the Workstation Agent panel. The main panel is divided into four parts.

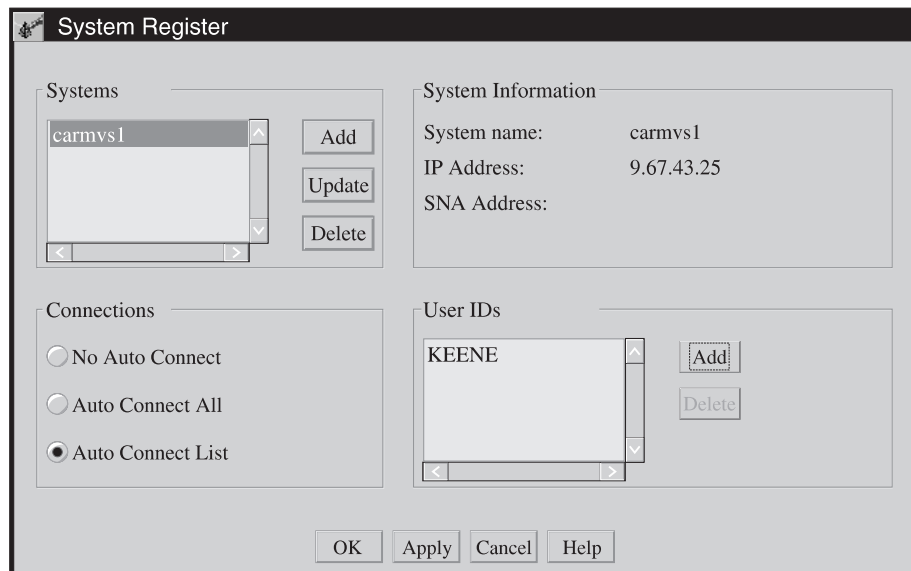
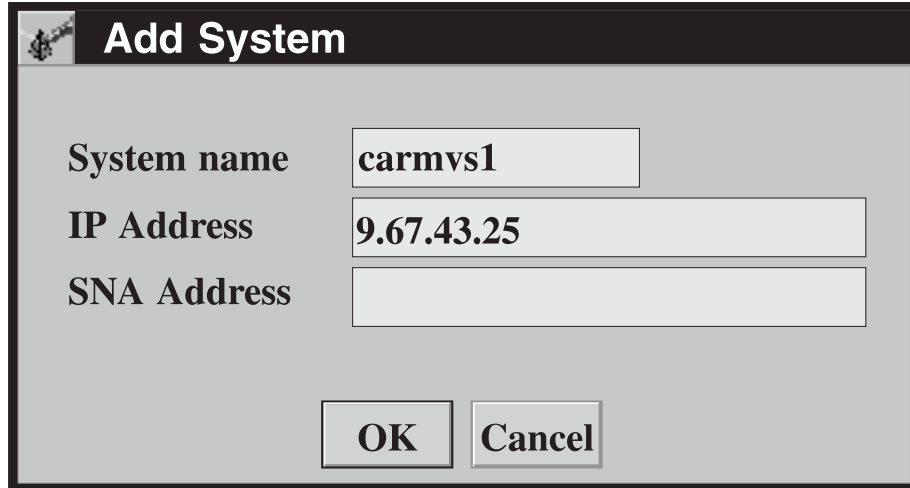


Figure 105. System Register Panel

The **Systems** section of the panel is where you name the system you want to connect from. Click on the **Add** pushbutton to add a new entry to the systems list. A pop-up dialog box like the one shown in Figure 106 on page 177 appears.



The image shows a 'Add System' dialog box. It has a title bar with a small icon and the text 'Add System'. Inside the dialog, there are three text input fields. The first is labeled 'System name' and contains the text 'carmvs1'. The second is labeled 'IP Address' and contains the text '9.67.43.25'. The third is labeled 'SNA Address' and is currently empty. At the bottom of the dialog, there are two buttons: 'OK' and 'Cancel'.

Figure 106. Add System Pop-up Dialog

There are entry fields for the system name and an IP or SNA address. If you do not know the system address, you can get it from the WSA connection panel. Until you set up the system register to bypass that panel, it will show you the address of the system that you are connecting from. Simply make your client/server connection, and before accepting the connection, note the address of the system.

After filling in the appropriate information, click on the **OK** button. After you finish your session with the System Register panel, this system will be available to the users you select without it being necessary for them to see the Workstation Agent connection panel.

You can update or delete system information in the same area of this panel. To update a system, first highlight it in the list by clicking on it. Then click on the **Update** pushbutton. A *Change System* pop-up dialog box, similar to the *Add System* window, appears on your screen with the system name and its IP or SNA address already filled in. Modify the information as you want to, then click on the **OK** button.

To delete a system from the System Register files, first highlight the desired system in the list by clicking on it. Then, click on the **Delete** pushbutton. The system and any user IDs associated with it in the System Register files are deleted.

The **Connections** part of the panel enables you to define how to set the connections that you want to make. The Connections choices are:

No Auto Connect

Selecting this choice means that no one connecting to the Workstation Agent can bypass the WSA connection panel for the specified system. In other words, everyone connecting to the WSA must use the connection panel to accept the connection from that system before continuing.

Auto Connect All

Everyone connecting to the WSA from the specified system will bypass the connection panel.

Auto Connect List

Selecting this choice activates the **User IDs** section of the System Register panel. When you make this selection, you must enter the ID of at least one user you want to be able to bypass the WSA connection panel when

Download Data Set to Workstation Utility (Option 3.7)

connecting from the specified system. Enter user IDs by clicking on the **Add** button in the User IDs section of the panel. A pop-up dialog like the one shown here appears.

Enter the user ID of each user you want to automatically connect from the

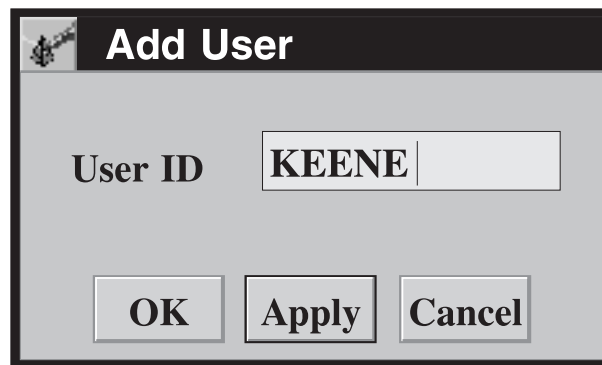


Figure 107. Add User Pop-up Dialog

highlighted system. If you are entering only one user ID at this time, click on the **OK** button to update the list and return to the System Register panel. If you are entering a list of IDs, click on the **Apply** button after each entry, then click on the **OK** button after the last one. As you enter IDs, they are added to the list appearing in this section of the System Register panel.

To delete IDs from the list, highlight the line in the list, then click on the **Delete** button located next to the list.

The **System Information** section of the System Register panel shows the name of the system highlighted in the Systems section of the panel, and its IP or SNA address. This is the system that you are currently working with on the System Register panel. You cannot change the information in the System Information section, it is for information only.

When you are finished working with the System Register panel, you can dismiss it by clicking on the **OK** button at the bottom of the panel. During long sessions where you are making many entries, it is recommended that you occasionally click on the **Apply** pushbutton to save your entries.

Selection 2–Data Set

The final option on the Download Data Set to Workstation (Option 3.7) panel is called **Data Set — Download/upload ISPF library, partitioned, or seq data set**. This option provides a panel-driven interface into the ISPF **FILEXFER** service, enabling you to transfer data between the host and the workstation.

Selecting option 2 causes the following panel to appear:

Download Data Set to Workstation Utility (Option 3.7)

The screenshot shows the ISPF Data Set Panel (ISPUDLDS) with the following fields and options:

- ISPF Library:**
 - Project . . . KEENE
 - Group . . . PRIVATE
 - Type . . . PANELS
 - Member . . . (Blank or pattern for member selection list)
- Other Partitioned or Sequential Data Set:**
 - Data Set Name . . . 'PDFTEDEV.SVT.VAENU(ISPTMAP)'
 - Volume Serial . . . (If not cataloged)
- Workstation File:**
 - File Name . . .
- Download or Upload:**
 - 1. Download to workstation
 - 2. Upload from workstation
- Options:**
 - / Generate statistics when upload
 - / Transfer in text mode
- Command** ==>

Figure 108. ISPF Data Set Panel (ISPUDLDS)

The Download or Upload selections enable you to indicate whether you want to download host data to the workstation, or upload workstation data to the host. Enter a 1 for *download to workstation*. Enter a 2 for *upload from workstation*.

You can transfer data from either PDS or sequential host data sets. The host data set must exist before attempting a transfer, but a PDS member is created if it does not already exist. Workstation files need not exist before downloading data from the host, but the specified directory must be there.

For downloading *only*, you can specify an asterisk (*) character in the workstation file name. ISPF substitutes the member name of the data being downloaded for the *. This enables you to select multiple members from the member list to be downloaded as separate files.

The **Generate Statistics on Upload** selection indicates whether ISPF member statistics should be generated when a workstation file is uploaded to a member of a PDS. Statistics are only generated when the host data set is record format F or V.

The **Transfer in Text mode** field determines whether the file transfer is done in text mode (with ASCII to EBCDIC translation) or in binary mode (without any translation). When transferring in text mode, the ISPF FILEXFER service provides a one-to-one mapping of all 256 code points between the host code page and the workstation code page. Most other file transfer utilities (for example, FTP) only provide a one-to-one mapping of displayable characters.

Outlist Utility (Option 3.8)

This utility gives you the ability to browse, print, delete, or requeue job output that is in a held SYSOUT queue. When you select this option, a panel is displayed (Figure 109 on page 180) that allows you to select an option and enter the appropriate operands.

Outlist Utility (Option 3.8)

```
Menu  Utilities  Help
-----
Outlist Utility
More:      +

L List job names/id(s) via the TSO STATUS command
D Delete job output from SYSOUT hold queue
P Print job output and delete from SYSOUT hold queue
R Requeue job output to a new output class
blank Display job output

For Job to be selected:
Jobname  . . _____
Class    . . . . _
JobID    . . . . _____

For Job to be requeued:
New Output class  . . _

For Job to be printed:
Printer Carriage Control  . . _      (A for ANSI      )
                                   (M for machine    )

Option ==>
F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel
```

Figure 109. Outlist Utility Panel (ISRUOLP1)

Outlist Utility Panel Action Bar

The Outlist Utility panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help The Help pull-down offers you the following choices:

- 1 General
- 2 Listing the status of jobs
- 3 Deleting the output of a held job
- 4 Printing the output of a held job
- 5 Requeueing the output of a held job
- 6 Displaying the Output of a held job
- 7 Appendices
- 8 Index

Outlist Utility Panel Fields

The fields on this panel are:

Jobname

The held SYSOUT job. It is required for all options except option L.

Class The SYSOUT hold queue. If you omit the CLASS operand, all SYSOUT queues are searched for the specified job.

JobID Required only if more than one job exists with the same job name.

New Output class

When requeuing a job (option R), enter the new SYSOUT hold class here.

Printer Carriage Control

When printing a data set (option P), enter a value here that corresponds to the type of carriage control characters in the data set. Valid values are:

A If the data contains American National Standard Institute (ANSI) carriage control characters.

M If the data contains machine control characters.

Blank If the data contains no carriage control characters.

The record formats for the corresponding data sets are FBA, FBM, and FB, respectively.

Outlist Utility Options

The following sections explain the options listed at the top of the Outlist Utility panel.

L — List Job Names/ID(s) via the TSO STATUS Command

If you select option L, a list of job names and job IDs is displayed. If you leave the job name blank, or if the job name is your user ID plus one identifying character, the status is listed for all jobs having job names consisting of your user ID followed by that identifying character. If you supply any other job name, the status for that exact job is displayed.

The list of job names is displayed on the lower portion of the panel. If the list is too long to fit on the screen, three asterisks are displayed on the last line of the screen. You can display the remainder of the list by pressing Enter.

D — Delete Job Output from SYSOUT Hold Queue

If you select option D, the held output for a specific job is deleted from the specified SYSOUT queue.

P — Print Job Output and Delete from SYSOUT Hold Queue

If you select option P, the held output for a specific job is removed from the SYSOUT queue and placed in an ISPF-defined data set for printing. You can choose the record format for this data set by putting an entry in the **Printer Carriage Control** field.

An optional print utility exit can be installed by your system programmer. If this exit is installed, it may cause the Outlist utility's response to differ from the following descriptions. Refer to *ISPF Planning and Customizing* for more information about the print utility exit.

Another factor that can affect the Outlist utility's performance is whether the TSO/E Information Center Facility is installed. If the TSO/E Information Center Facility is installed, your installation can optionally allow ISPF to display a panel for submitting the TSO/E Information Center Facility information with the print request. See Figure 138 on page 240 for an example of this panel and "Using the TSO/E Information Center Facility" on page 162 for information about the fields on this panel.

If the TSO/E Information Center Facility is not installed, the Outlist utility displays the panel shown in Figure 137 on page 233 when you press Enter. Use this panel to

Outlist Utility (Option 3.8)

tell ISPF how and where the job output is to be printed. This option does not honor multiple copies for output on hold queue. To print multiple copies use option R.

ISPF uses temporary data sets named *prefix.userid.SPFxxx.OUTLIST* (if your data set prefix in your TSO user profile is different from your TSO userid) or *userid.SPFxxx.OUTLIST* (if your prefix and userid are the same), where *xxx* is a number between 100 and 999.

CAUTION:

If you keep or use all data sets through 999, ISPF resets to 100 and uses the existing data sets. Also, ISPF can use the data sets that you allocate using the temporary data set naming convention.

R — Requeue Job Output to a New Output Class

If you select option R, the held output for a specific job is requeued to another SYSOUT class from the specified SYSOUT queue. You must enter the new SYSOUT class on the panel in the **New Output class** field. You can use this option to print output with multiple copies by requeuing to a SYSOUT class predefined to print multiple copies.

Blank — Display Job Output

If you leave the **Option** field blank, the held output for the specified job is displayed in Browse mode. You can use all Browse commands. The data remains in the SYSOUT queue. When you enter the END or RETURN command to end Browse, the Outlist Utility panel is displayed again, and you can then choose to print, requeue, or delete the job output.

Command Table Utility (Option 3.9)

The Command Table utility (option 3.9) enables you to create or change ISPF application command tables. When you select this option, a panel is displayed (Figure 110 on page 183) to prompt you for an application ID. The name of the command table is then derived by adding CMDS to the application ID. If the table exists in the table input library, ISPTLIB, it is displayed and can be modified. If the table does not exist in the table input library, a new table is generated.

The command table displays the search order of commands for a particular logical screen. The order is from top to bottom of those commands displayed. The **User table** and **Site table** fields are blank if no values are set for them in the **ISPF Configuration** table, or if values have been set but the tables do not exist in the **ISPTLIB** concatenation.

You cannot use this utility to change a command table that is currently in use. Command table ISPCMDS, the system command table, is always in use by the Dialog Manager component. If you enter ISP in the **Application ID** field, ISPF displays the ISPCMDS command table in read-only mode.

While you are using this utility to change a command table, the table cannot be used for other purposes. For example, you cannot use split screen and select a function with NEWAPPL(XYZ) if you are changing command table XYZCMDS.

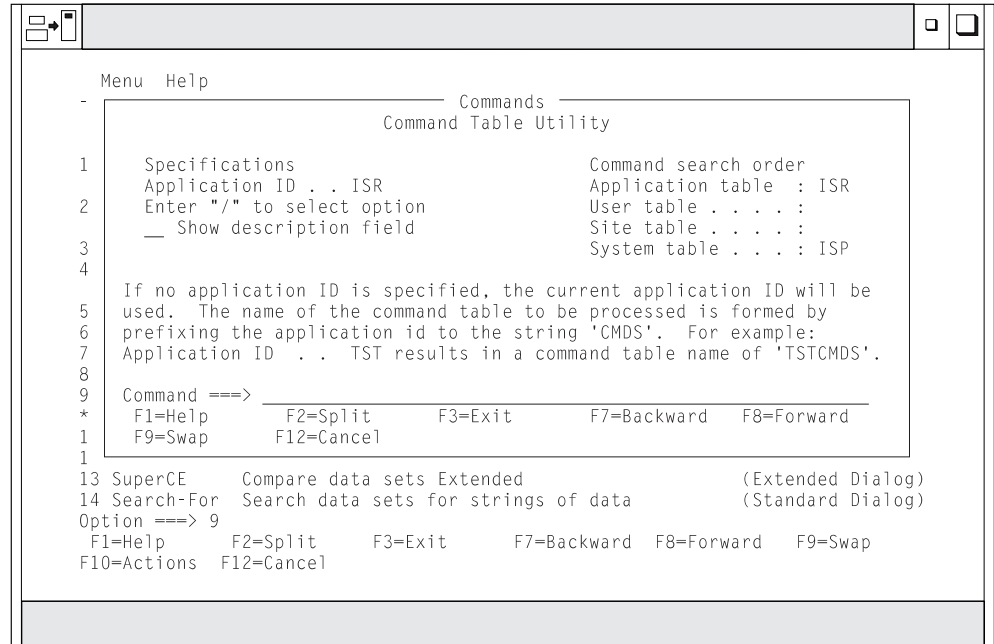


Figure 110. Command Table Utility Panel (ISPUCMA)

Command Table Utility Panel Fields

The fields on the Command Table Utility panel function as follows:

Application ID

Contains the name of an application for which you want to define commands

Show description field

Allows you to display the descriptions as well as the commands and definitions.

The command table for the named application is displayed on a Command Table editing panel (Figure 111 on page 184). This panel can be scrolled up and down using the scroll commands.

Command Table Utility (Option 3.9)

File Menu Utilities Help

Update TSTCMDS Row 1 to 4 of 4

Insert (I), delete (D), repeat (R) and edit (E) command entries.
Enter END command to save changes or CANCEL to end without saving.

Verb	T	Action
SORT	0	SELECT PGM(PQRSORT) PARM(&ZPARM)
PREPARE	4	
QUIT	2	ALIAS END
EXPLAIN	4	

***** Bottom of data *****

Command ==> _____ Scroll ==> PAGE

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F10=Actions F12=Cancel

Figure 111. Command Table Editing Panel (ISPUCMD)

The column headings on the panel are:

Verb The command verb, which is the name of the command you are defining in the command table. A command verb must be from 2–8 characters long, inclusive, and must begin with an alphabetic character. The content of this column is assigned to the ZCTVERB system variable.

T (truncation)

The minimum number of characters that you must enter to find a match with the command verb. If this number is zero or equal to the length of the command verb, you must enter the complete command verb. For example, in Figure 111 the PREPARE command has a truncation value of 4. Therefore, for the TST application used as the example in the figure, only the first four letters, PREP, must be entered to call this command. The content of this column is assigned to the ZCTTRUNC system variable.

Action

The actual coding of the action to be carried out when you enter the command. The action length must not be greater than 240 characters. The content of this column is assigned to the ZCTACT system variable.

Note: Do not use ACTIONS, CANCEL, CRETRIEV, CURSOR, EXIT, PRINT, PRINTG, PRINTHI, PRINTL, PRINTLHI, RESIZE, RETF, RETP, RETRIEVE, SPLIT, SPLITV, SWAP, WINDOW, or WS as keywords in the Action column. These keywords are intended only for use in the system command table distributed with ISPF. They are not intended for use in application command tables.

The valid actions are:

Select Causes the selected dialog (command, program, or selection panel) to be given control immediately. Refer to *ISPF Dialog Developer's Guide and Reference* for more information about the SELECT statement and its keywords.

Command Table Utility (Option 3.9)

- Alias** Allows one command verb to carry out the action defined for another. For example, in Figure 111 on page 184, QUIT is an alias for END. Therefore, for the TST application used as the example in the figure, entering QUIT causes the same action to occur as entering END.
- Passthru** Causes the command to be passed through to the dialog as if it had not been found in the command table.
- Setverb** Causes the command to be passed through to the dialog, with the command verb stored separately from the operands.
- NOP** Causes the command to be inoperative. An inactive command message is displayed.
- Blank** Causes the command table entry to be ignored. ISPF continues to search for additional entries for the same command verb. If the command is not found in either the application command table or the system command table, an invalid command message is displayed.
- xxxxx** A variable name, beginning with an ampersand (&), allows dynamic specification of the command action.

Description

An optional, brief description of the action the command verb is to perform. Since this column is offset three spaces under the Action column, the description length must not be greater than 80 characters. The content of this column is assigned to the ZCTDESC system variable.

For a new table, this panel initially contains dummy entries with all fields shown as underscores. The underscores are pad characters and need not be blanked out. However, any null entries where at least the verb contains all underscores are automatically deleted when the table is saved.

Scrolling a Command Table

You can scroll the table entries, using the ISPF UP and DOWN scroll commands, and change one or more entries simply by typing over them.

Saving a Command Table

The END command causes the table to be saved in the table output library, ISPTABL, and ends the utility.

Cancelling a Command Table

The CANCEL command ends the command table display without saving the table.

Using Command Table Line Commands

You can enter the following line commands at the left of any entry by typing over the four quotation marks. Multiple line commands or changes can be entered in a single interaction. Line commands followed by a number, such as D3, are repeated that number of times. The lines are processed in the order in which they appear on the screen. Any line commands or changes that are entered concurrently with the END command are processed before the table is saved.

Command Table Utility (Option 3.9)

D — Deleting Lines

The D command deletes one or *n* lines (D[*n*]).

E — Editing Lines

The E command edits one or *n* lines (E[*n*]). You can modify the action or description fields of a line.

I — Inserting Lines

The I command inserts one or *n* lines (I[*n*]). The inserted lines contain underscores (pad characters) in all field positions.

R — Repeating Lines

The R command repeats a line one or *n* times (R[*n*]). The repeated lines contain underscores (pad characters) in the Verb and T (truncation) fields, but the Action and Description fields are copied from the line on which the R command was entered.

V — Viewing Lines

The V command views one or *n* lines (V[*n*]). You can look at the entire command entry including the command action and description fields, but you cannot change them.

Format Specifications Utility (Option 3.11)

The Format Specifications utility (option 3.11) is provided to support the IBM 5550 terminal using the Double-Byte Character Set (DBCS). It is used to maintain formats that are used when viewing, browsing, and editing to display data sets that contain predefined formatted records.

The purpose of a format is to structure data from a record into fields and to define the order these fields are to be physically displayed on the screen when you are viewing, browsing, and editing.

When you select this option, a panel is displayed (Figure 112 on page 187) that allows you to add, copy, delete, or update a format. You can also display the format list.

```

Menu  Utilities  Help
-----
                        Format Specifications
                        More:      +

A          Add a new format
C          Copy formats
D          Delete a format
U          Update format
L or BLANK Display format list

Format Name . . . _____

For COPY operations, specify the following:

From Format . . . _____ (Blank for format list, * for all formats)
From Table . . . _____ (Default is "ISRFORM" )

Note: The Format Utility is provided for support of the IBM 5550 terminal
Option ==>
F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel
  
```

Figure 112. Format Specifications Panel (ISRFM01)

Format Specifications Panel Action Bar

The Format Specifications panel action bar choices function as follows:

- | | |
|------------------|--|
| Menu | See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down. |
| Utilities | See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down. |
| Help | The Help pull-down offers you the following choices: <ol style="list-style-type: none"> 1 Add a new format definition 2 Copy formats 3 Delete a format 4 Update a format 5 Display Format selection list 6 Appendices 7 Index |

Format Specifications Panel Fields

The fields on this panel are:

Format Name

The name of the format that you want to add, delete, or update. When copying a format (option C), this is the name you want the copied format stored under.

From Format

When copying a format (option C), you can:

- Enter the name of a format you want to copy
- Enter an asterisk (*) to copy all formats

Format Specifications Utility (Option 3.11)

- Leave the field blank to display a copy format selection list.

See Figure 114 on page 190 for an example of a Copy Format Selection List display.

From Table

When copying a format (option C), you can:

- Enter the name of a table from which you want to copy a format
- Leave the field blank if you want to copy a format from the ISRFORM table.

Format Specifications Panel Options

The following sections describe the options shown at the top of the Format Specifications panel.

A — Add a New Format

If you specify option A and a format name, the Format Definition panel (Figure 113) is displayed.

Field Number	Start Column	Field Length	Field Type	Field Number	Start Column	Field Length	Field Type
1	00000	00	—	2	00000	00	—
3	00000	00	—	4	00000	00	—
5	00000	00	—	6	00000	00	—
7	00000	00	—	8	00000	00	—
9	00000	00	—	10	00000	00	—
11	00000	00	—	12	00000	00	—
13	00000	00	—	14	00000	00	—
15	00000	00	—	16	00000	00	—
17	00000	00	—	18	00000	00	—
19	00000	00	—	20	00000	00	—

Field Number: Identifies the field position on the screen.
Start Column: From 1 to 32760; Specifies column position in the record.
field Length: From 1 to 71; Fields must not overlap.
Field Type : E - single-byte, D - double-byte, M - mixed data

Enter the END command to exit and save the format.
Enter the CANCEL command to exit without saving the format.
Command ==> A
F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Figure 113. Format Definition Panel (ISRFORM2)

A field definition includes:

Field Number

The number of the field for which you are defining a format. You can define up to 20 fields.

Start Column

Starting column position in the record.

Field Length

Field length in bytes; the maximum is 71 bytes.

Field Type

The type of data that can be entered in the field. Valid types are:

E EBCDIC (single-byte)

- D** DBCS (double-byte)
- M** Mixed data.

Note: All three of these field types can contain extended graphics characters. CAPS ON processing is not possible because of context dependencies. Therefore, it is ignored when you are editing formatted data.

The format definition information applies to both existing records and inserted records in a data set.

Note: It is recommended that you avoid using STD or COBOL formats with numbered data. The results can be different from using formats with unnumbered data. If you must use numbered data, do not define the columns the sequence numbers will appear in, or define an EBCDIC or mixed data field for them.

C — Copy Formats

If you specify option C on the Format Specifications panel, the following occurs:

- If you specify both an asterisk (*) in the **From Format** field and a table name other than ISRFORM in the **From Table** field, all formats stored in the “From” table are copied to ISRFORM.

Note: If you specify a table name in the **From Table** field, and that table does not have the same format as ISRFORM, a severe error occurs.

- If you specify both a format name and a “From” format, the format is copied. If you specified a “From” table (other than ISRFORM), the format is copied from that table. Otherwise, the format is copied from ISRFORM. The Format Definition panel for the newly created format, containing the currently defined fields, is displayed. You can add, delete, and update field definitions. When you enter the END command, the format definition is stored in ISRFORM under the format name you specified.
- If you specify a format name but no “From” format, the Copy Format Selection List panel (Figure 114 on page 190) is displayed.

If you did not specify a “From” table, the formats listed are those stored in ISRFORM, the default format table. Otherwise, the formats listed are those stored in the table you specified.

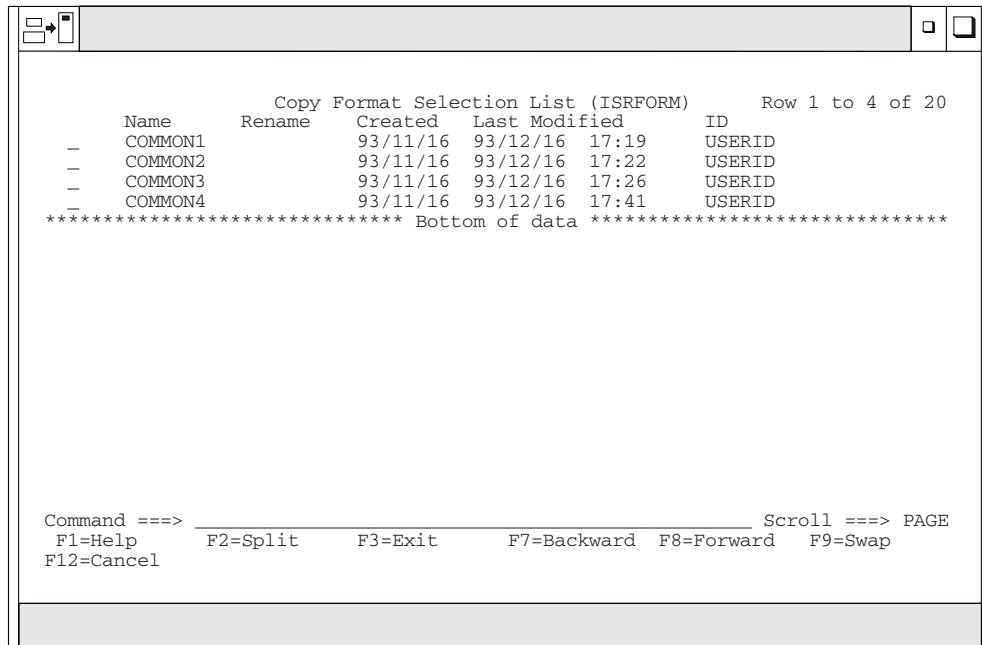
You can select a format to copy by entering the S line command to the left of that format name. Other commands you can enter are U (Update), R (Rename), D (Delete), SELECT (which is similar to S), SORT, and LOCATE. See “Format Selection List Commands” on page 191 for a description of these commands.

The format is copied, and the Format Definition panel for the newly created format, containing the currently defined fields, is displayed. You can add, delete, and update field definitions. When you enter the END command, the format definition is stored in ISRFORM under the format name you specified on the Format Specifications panel.

- If you specify neither a format name nor a “From” format, but you do specify a “From” table (other than ISRFORM), the Copy Format Selection List panel is displayed. You can select one or more formats to copy by entering the S line command to the left of the format name(s). Each of these formats is copied under the same name from the specified “From” table to the ISRFORM table.

Note: If you do not specify option C but specify a name in the **From Format** field, the **From Format** field is ignored.

Format Specifications Utility (Option 3.11)



Copy Format Selection List (ISRFORM)						Row 1 to 4 of 20
	Name	Rename	Created	Last Modified	ID	
—	COMMON1		93/11/16	93/12/16 17:19	USERID	
—	COMMON2		93/11/16	93/12/16 17:22	USERID	
—	COMMON3		93/11/16	93/12/16 17:26	USERID	
—	COMMON4		93/11/16	93/12/16 17:41	USERID	
***** Bottom of data *****						

Command ==> _____ Scroll ==> PAGE
F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F12=Cancel

Figure 114. Copy Format Selection List Panel (ISRFORM04)

D — Delete a Format

If you specify option D and a format name on the Format Specifications panel, the format is deleted.

U — Update a Format

If you specify option U and a format name on the Format Specification panel, the Format Definition panel containing the currently defined fields is displayed. You can add, delete, and update field definitions.

L or BLANK — Display Format List

If you specify option L or leave the Option line blank on the Format Specifications panel, the Format Selection List panel (Figure 115 on page 191) is displayed.

Format Selection List						Row 1 to 4 of 20	
	Name	Rename	Created	Last Modified		ID	
-	FORM01		93/11/16	93/12/16 17:19		USERID	
-	FORM02		93/11/16	93/12/16 17:22		USERID	
-	FORM03		93/11/16	93/12/16 17:26		USERID	
-	FORM04		93/11/16	93/12/16 17:41		USERID	
***** Bottom of data *****							

Command ==>

Scroll ==>

PAGE

F1=Help

F2=Split

F3=Exit

F7=Backward

F8=Forward

F9=Swap

F12=Cancel

Figure 115. Format Selection List Panel (ISRFM03)

Format Selection List Commands

The following sections describe the commands you can use on a Format Selection List panel.

Deleting a Format

If you specify the D line command beside a format name, the format is deleted.

Locating Format Names

The LOCATE command is another useful tool, especially if you have a long format list. To use the LOCATE command, ensure that the list is sorted by name. Next, enter the LOCATE command on the Command line. The syntax is:

LOCATE *name*

where:

name The name of the format you want to find.

For example, the following command would find a format named FORM03:

```
LOCATE FORM03
```

If the format exists, the entry for the specified format name appears as the second line following the header lines. If the specified name is not found, the existing format name that would immediately precede the specified name appears as the first line following the header lines.

Renaming a Format

If you specify the R line command beside a format name, you must also specify its new name in the **Rename** field before you press Enter. If you do not, the Enter required field message appears in the upper-right corner of the screen and the cursor moves to the Rename field.

Format Specifications Utility (Option 3.11)

Sorting Format Names

You can sort the name list on this panel by entering the SORT command on the Command line. The syntax of the SORT command is:

SORT [NAME | TIME]

where:

NAME

Sort by name.

TIME Sort by time last modified.

For example, the following command would sort a format selection list by time:

SORT TIME

Updating or Selecting a Format

If you specify the U or S line command beside a format name, the Format Definition panel containing the currently defined fields is displayed. You can add, delete, and update field definitions.

You can specify that multiple operations be done at the same time. However, if you specify U or S with other line commands, any commands after the first U or S are ignored.

The SELECT command provides you with another way to specify a format. This command is entered on the Command line.

The syntax of the SELECT command is:

SELECT *name*

where:

name

The name of the format you want to select.

If the format exists, the Format Definition panel containing the currently defined fields is displayed. You can add, delete, and update field definitions.

If no format exists for that name, a new format is created, and the Format Definition panel is displayed to allow you to define fields.

SuperC Utility (Option 3.12)

Note: For an introduction to the SuperC and SuperCE utilities (options 3.12 and 3.13), see Appendix A. SuperC Reference.

The SuperC utility (option 3.12) is a dialog that uses the SuperC program to compare data sets of unlimited size and record length at the file, line, word, or byte level. The panel shown in Figure 116 on page 193 is used to specify the name of a new data set.

Note: In this context, a *new* data set is an updated version of a previously created data set, such as a data set in your private library that has been modified but has not yet been promoted.

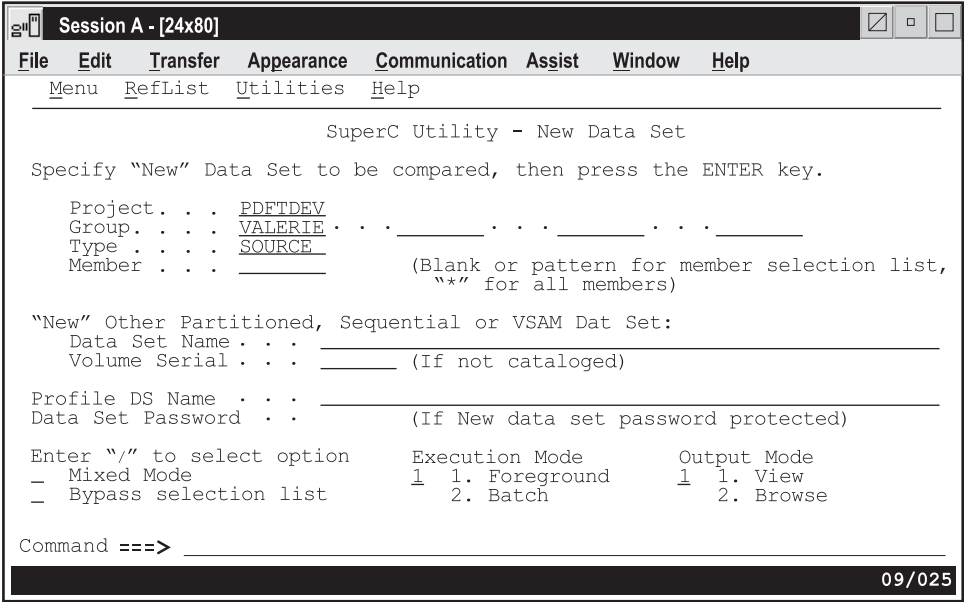


Figure 116. SuperC Utility Panel (ISRSSNEW)

This panel requires only the names of the input data sets and a foreground or batch mode setting.

Note: In order for DBCS searches and compares to function properly, ISPF must be invoked with the JAPANESE keyword, on a terminal that supports DBCS, and the MIXED process option must be supplied to SuperC.

SuperC Utility Panel Action Bar

The SuperC Utility panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
RefList	See the <i>Using Personal Data Set Lists and Library Lists</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on referral lists.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers you the following choices: <ul style="list-style-type: none">1 General2 Overview of SuperC3 Specifying the "NEW" data set4 Specifying the "OLD" data set5 Member selection6 Setting batch output parameters7 Interpreting listings8 Interpreting return codes9 Appendices10 Index

SuperC Utility Panel Fields

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except:

Profile DSN

The name of an optional data set that can contain a compare type, listing type, sequence numbers setting, Browse setting, process options, and process statements. All these elements, when combined in one data set or member, are called a *profile*. See "Profiles and Defaults - Activate Profiles and Defaults" on page 211 for information about using the SuperCE utility (option 3.13) to create a profile data set.

The listing type and sequence numbers setting of the profile are copied onto the panel used to specify the old data set name (Figure 117 on page 195), but can be typed over or blanked out. However, other elements of the profile are in effect, even though they are not shown on the panel.

Mixed Mode

Select this field to have SuperC scan and parse the input data set lines for DBCS text strings.

Note: Mixed Mode is not valid for the File or Byte compare.

Bypass Selection List

When a member pattern is entered in the PDS Member List field or the member name portion of the data set field (such as, MY.DATA.SET(pattern)), selecting this field causes SuperC to process all members matching that pattern without displaying a member selection list. Leaving this field blank causes the member list to be displayed.

Execution Mode

The processing mode you want to use when comparing the data sets. Choose one of the following:

- 1 **Foreground.** After the old data set panel and member selection, if any, are completed, foreground mode compares the new and old data sets and stores the results in the data set specified in the **Listing DS Name** field, which you can browse at the terminal.
- 2 **Batch.** After the old data set panel and the member list, if any, are completed, batch mode causes the display of the SuperC Utility - Submit Batch Jobs panel, so you can specify job card and print disposition information or edit the JCL. Then, the batch job is submitted to compare the new and old data sets. See "Submitting a SuperC Job in Batch Mode" on page 199 for more information.

Note: You cannot specify a data set password in batch mode. If your data sets are password protected, use foreground mode.

Output Mode

The output mode you want to use when displaying the listing file. Choose one of the following:

- 1 **View.** This enables the listing file to be displayed in *view* mode. All View functions are enabled in this mode.
- 2 **Browse.** This enables the listing file to be displayed in the *browse* mode. All Browse functions are enabled in this mode.

When you complete the New Data Set panel and press Enter, ISPF displays the panel shown in Figure 117. Of the five fields shown at the bottom of the panel (Volume Serial, Listing DS Name, Data Set Password, Listing Type, and Sequence Numbers), all except **Listing Type** may not appear, depending on the mode you choose (foreground or batch) and the contents of the profile data set. Also, if you request a member list or specify an asterisk (*) in the **Member** field on the new data set panel, ISPF does not display a **Member** field on the old data set panel.

Note: In this context, an *old* data set is a base version of a data set, such as a data set in a production library.

Menu	RefList	Utilities	Help
SuperC Compare Utility - Old Data Set			
Specify "Old" Data Set to be compared, then press the ENTER Key to compare to			
"New" Data set . . . : PDFTDEV.SVT.SCRIPT			
			More: +
Project . . .	PDFT430		
Group . . .	BASE		
Type . . .	SCRIPT		
Member . . .			
"Old" other Partitioned, Sequential or VSAM Data Set:			
Data Set Name . . .			
Volume Serial . . .	(If not cataloged)		
Listing DS Name . . .	SUPERCLIST		
Data Set Password . .	(If Old data set password protected)		
Listing TYPE	2	1. Delta	2. CHNG 3. Long 4. OVSUM 5. Nolist
Command ===>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=Actions	F12=Cancel		

Figure 117. SuperC Utility - Old Data Set Panel (ISRSSOLD)

Specify the name of an old data set. The type of old data set that you can specify depends on the type of new data set you specified on the previous panel. For example, you can compare:

- A complete new PDS to a complete old PDS
- A new sequential data set to:
 - An old sequential data set
 - An old membered PDS
- A new membered PDS to an old sequential data set.

In this context, the term *membered PDS* refers to a PDS for which a single member has been specified, such as:

```
'USERID.TEST.SCRIPT(NEWDATA)'
```

SuperC treats a membered PDS as a sequential data set because the comparison is done on a one-to-one basis. However, SuperC cannot compare a sequential data set to a complete PDS because it cannot compare one data set to more than one member of another data set.

When you press Enter, ISPF either displays a member selection list or begins the comparison. All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except the following:

SuperC Utility (Option 3.12)

Update DS Name

Tells SuperC the name of the data set that will contain column-oriented results of the comparison.

Note: This field is not displayed unless your profile data set contains an update (UPDxxxx) process option.

This data set is normally used as input to post processing programs and can be specified in addition to the normal listing data set. See the Process Options selection in “Process Options - Select Process Options” on page 209 for information about the SuperC process options.

If you leave this field blank, SuperC uses the following default name:

`prefix.userid.SUPERC.UPDATE`

where *prefix* is your TSO prefix and *userid* is your user ID. If your prefix and user ID are identical, only your prefix is used. Also, if you do not have a prefix, only your user ID is used.

If you enter a fully qualified data set name SuperC uses it as specified. Otherwise, SuperC only appends your TSO prefix to the front of the data set name specified. If you run with TSO PROFILE NOPREFIX, SuperC uses the name as you entered it, which can result in an attempt to catalog the name in the master catalog.

If you enter the name of a data set that already exists, the contents of that data set are replaced by the new update output.

If you enter the name of a data set that does not exist, SuperC allocates it for you. The data set is allocated as a sequential data set unless you enter a member name after it, in which case it is allocated as a partitioned data set.

Note: For the UPDMVS8, UPDCMS8, UPDSEQ0, and UPDPDEL process options, the update data set contains valid data but only after a successful compare when differences are detected. The data set is always empty after a comparison that shows the data sets or members being compared have no differences.

Listing Type

The type of listing you want SuperC to create when it compares the data sets. This is a required field, so you must choose one of the following. See Appendix B. SuperC Listings for sample listings.

DELTA	Lists the differences between the source data sets, followed by the overall summary.
CHNG	Lists the differences between the source data sets, plus up to 10 matching lines before and after the differences. This listing is a variation of the DELTA listing; the matching lines before and after help you recognize changed areas of the source data sets.
LONG	Lists all the new data set source lines, plus old data set deleted lines. Both inserted and deleted lines are flagged.
OVSUM	Lists only the overall summary of the comparison. However, a PDS comparison generates an individual summary line for each PDS member.

NOLIST Produces no listing output. In foreground mode, only a message is returned to show the outcome of the compare.

Listing DS Name

The name of the list data set to which SuperC writes the results of the comparison. However, if you enter NOLIST in the **Listing Type** field, SuperC does not create an output listing, so this name is ignored. Also, if you chose batch mode, this field does not appear on the panel. The SuperC Utility - Submit Batch Jobs panel is used instead.

If you leave this field blank, SuperC allocates a list data set, using default data set attributes and the following data set name:

`prefix.userid.SUPERC.LIST`

where *prefix* is your TSO prefix and *userid* is your user ID. If your prefix and user ID are identical, only your prefix is used. Also, if you do not have a prefix, only your user ID is used.

If you enter a fully qualified data set name SuperC uses it as specified. Otherwise, SuperC only appends your TSO prefix to the front of the data set name specified. If you run with TSO PROFILE NOPREFIX, SuperC uses the name as you entered it, which can result in an attempt to catalog the name in the master catalog.

If you enter the name of a data set that already exists, the contents of that data set are replaced by the new output listing. However, if the data set is sequential, you can add this listing to the data set instead of replacing it by including the APNDLST process option in your profile data set.

If you enter the name of a data set that does not exist, SuperC allocates it for you. The data set is allocated as a sequential data set unless you enter a member name after it, in which case it is allocated as a partitioned data set.

Sequence Numbers

A value that tells SuperC whether to exclude sequence number fields from its comparison of your data sets. This field is not displayed if the compare type is FILE or BYTE. You can choose one of the following:

blank	Exclude Sequence Number fields from the comparison if the data set is F 80 or V 255 and the compare type is Line Otherwise, treat as data.
SEQ	Exclude Sequence Number fields from the comparison. Sequence numbers are assumed in columns 73–80 in F 80 and in columns 1–8 in V 255 data sets.
NOSEQ	Treat F 80/V 255 standard sequence number columns as data.
COBOL	Ignore columns 1–6 in F 80 data sets. Data in columns 1–6 is assumed to be sequence numbers.

SuperC Member Lists

The panel shown in Figure 118 on page 198 is displayed after you specify the old data set name, but only if all the following statements are true:

SuperC Utility (Option 3.12)

- The new data set is partitioned.
- The **Member** field, shown on the SuperC Utility panel (see Figure 116 on page 193), or the **PDS Member List** field, shown on the SuperCE Utility panel (see Figure 121 on page 203) was left blank or a pattern was used, and *Bypass Selection List* was not selected. See the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about displaying member selection lists.
- The profile data set or statements data set being used does not contain any SELECT process statements.

Menu Functions Utilities Help						
COMPARE		PDFDEV.SVT.SCRIPT			Row 00001 of 00574	
Enter END command to process selections or CANCEL to leave the member list. Enter Old member(Oldmem) name if it is different from New member(Newmem) name.						
Newmem	Oldmem	Size	Created	Changed	ID	
. FLMQ00		0	2000/11/17	2000/11/17 20:29:03	SCLM	
. FLMQ01		0	2000/11/17	2000/11/17 20:29:06	SCLM	
. FLM09		0	2001/03/09	2001/03/09 19:32:07	SCLM	
. FLM29		0	2001/03/09	2001/03/09 19:32:27	SCLM	
. FLM39		0	2001/03/09	2001/03/09 19:32:58	SCLM	
. FLM49		0	2001/03/09	2001/03/09 19:33:04	SCLM	
. ISPA00		0	2000/11/17	2000/11/17 20:03:44	SCLM	
. ISPA10		0	2000/11/17	2000/11/17 20:03:46	SCLM	
. ISPA11		0	2000/11/17	2000/11/17 20:03:49	SCLM	
. ISPA20		0	2000/11/17	2000/11/17 20:03:50	SCLM	
. ISPA30		0	2000/11/17	2000/11/17 20:03:52	SCLM	
. ISPA31		0	2000/11/17	2000/11/17 20:03:55	SCLM	
. ISPA32		0	2000/11/17	2000/11/17 20:06:10	SCLM	
Command ==>				Scroll ==> PAGE		
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down	F9=Swap
F10=Left	F11=Right	F12=Cancel				

Figure 118. SuperC Member List Panel (ISRSSML)

The members displayed in this list are members in the new data set. If the OLDMEM column is blank, SuperC assumes each member in the new data set is to be compared with a member of the same name in the old data set.

If you enter a member name in the OLDMEM column, SuperC compares this member to the one listed beside it in the NEWMEM column.

To compare your selections, enter the END command. If you have not selected any members, ISPF returns you to the previous panel.

To cancel your selections, enter either:

- The RESET command to remove all unprocessed selections without ending the member list display
- The CANCEL command to end the member list display without processing selections that are still on the screen.

Note: Both the jump function (=) and the RETURN command cause an implied cancellation of selections before they are carried out.

For more information about member lists, see the **Using Member Selection Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*.

Submitting a SuperC Job in Batch Mode

If you selected Batch Mode (2) on the SuperC Utility panel, the panel shown in Figure 119 is displayed before the job is submitted. This panel allows you to specify one of the following:

- The SYSOUT class, which determines the printer to which your job is sent and the format used for the printed output
- The name of a listing data set
- Output data definitions that you can use to give the printer additional instructions, such as an output destination that is not defined by a SYSOUT class.

SuperC Utility - Submit Batch jobs

Press ENTER to continue submit

Enter "/" to select option
 / Edit JCL before user submit

Generate Output Type:
 1. SYSOUT Class
 2. Data Set Name
 3. //OUTDD DD

SYSOUT Class A _____

Data Set Name _____

//OUTDD DD _____

// _____

LRECL for the Listing Output will be 133

Job statement information: (Required - Enter/Verify JOB control statement)

==> //USERIDA JOB (ACCOUNT),'NAME'
 ==> /*
 ==> /*
 ==> _____

Command ==> _____

Figure 119. SuperC Utility - Submit Batch Jobs Panel (ISRSCSUB)

The **Job statement information** field is explained in the **Job Statement Information** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*. The other fields on the panel shown in Figure 119 are:

SYSOUT class

A system output classification defined by your installation, which defines certain print characteristics, such as the printer and the format that is used to produce the output. You can enter any valid SYSOUT parameters. This field is required if you leave the **Option** field blank.

If you enter either option 1 or option 2, the **SYSOUT class** field is ignored. However, for option 2, you can include the SYSOUT= operand in an **OUTDD DD** field.

Data Set Name

The name of the listing data set that you want ISPF to store your compare results in. This data set can be either partitioned or sequential.

The **Data Set Name** field is required if you use option 1 on this panel. This field serves the same purpose as the **Listing DS Name** field, which is used when running the SuperC utility in foreground mode.

SuperC Utility (Option 3.12)

The logical record length (LRECL) of the listing data set is displayed under the blank OUTDD lines on the SuperC Utility - Submit Batch Jobs panel. SuperC creates listings with one of four LRECLs:

- 132 Standard listing for the NOPRTCC process option; printer control characters are omitted.
- 133 Standard listing.
- 202 Wide listing for the NOPRTCC process option; printer control characters are omitted.
- 203 Wide listing.

If you specify an existing sequential data set with an incorrect LRECL, SuperC overrides the data set specifications. This applies to any listing and update data sets in both foreground and batch.

A separate operation, such as using the Hardcopy utility (option 3.6), is needed to print the listing data set.

If you leave the **Option** field blank or enter option 2, the **Data Set Name** field is ignored. Therefore, to specify an output data set in either of these two situations, you must include the DSN= operand in an **OUTDD DD** field.

Specifying Existing Data Sets

The following rules apply when specifying the name of an existing data set:

- When you submit JCL for processing, the output listing produced by that JCL usually replaces the contents of the specified data set, if any exist. Therefore, be careful when specifying the name of an existing data set.

You can keep a history of changes by using the APNDLST compare option when you run the comparison. This compare option adds the new output listing to the specified sequential data set's contents instead of replacing it.

Note: Using the APNDLST process option with a packed output listing file may cause unpredictable results in the output listing file.

- Use standard TSO data set naming conventions.

Specifying Nonexistent Data Sets

The following rules apply when specifying the name of a data set that does not exist:

- If you include a member name in the data set specification, ISPF allocates a partitioned data set with suitable attributes for the listing.
- If you do not specify a member name, ISPF allocates a sequential data set.

//OUTDD DD

Output data definitions that are used to specify additional printer instructions in job control language (JCL). This field is required if you use this panel. Otherwise, it is ignored.

The **OUTDD DD** fields are provided so you can pass to your printer all the JCL needed to format special types of output that may not be supported by your installation's SYSOUT class definitions. The example shown in Figure 119 on page 199 specifies a wide format for printing on 14 3/4 inch forms.

The **SYSOUT class** and **Data Set Name** fields are ignored. If you need to specify this information, be sure to include it in your OUTDD DD job card. If you specify a data set name in your OUTDD DD job card, the output data set is printed and kept. Otherwise, it is printed and deleted. Here are some examples:

- To specify a SYSOUT class, enter:

```
//OUTDD DD SYSOUT=X
```

where X is the SYSOUT class, such as A, B, or C.

- To specify a data set name, enter:

```
//OUTDD DD DSN=fully.qualified.name
//          DISP=XXXXX...
```

where XXXXX... is one of the following:

- For an old data set:

```
OLD
```

- For a new sequential data set:

```
(NEW,CATGL),SPACE=(3325,(50,100),RLSE),UNIT=SYSDA
```

- For a new partitioned data set

```
(NEW,CATGL),SPACE=(3325,(50,100,25)),UNIT=SYSDA
```

- For a sequential data set that will be modified by, instead of replaced by, the comparison results:

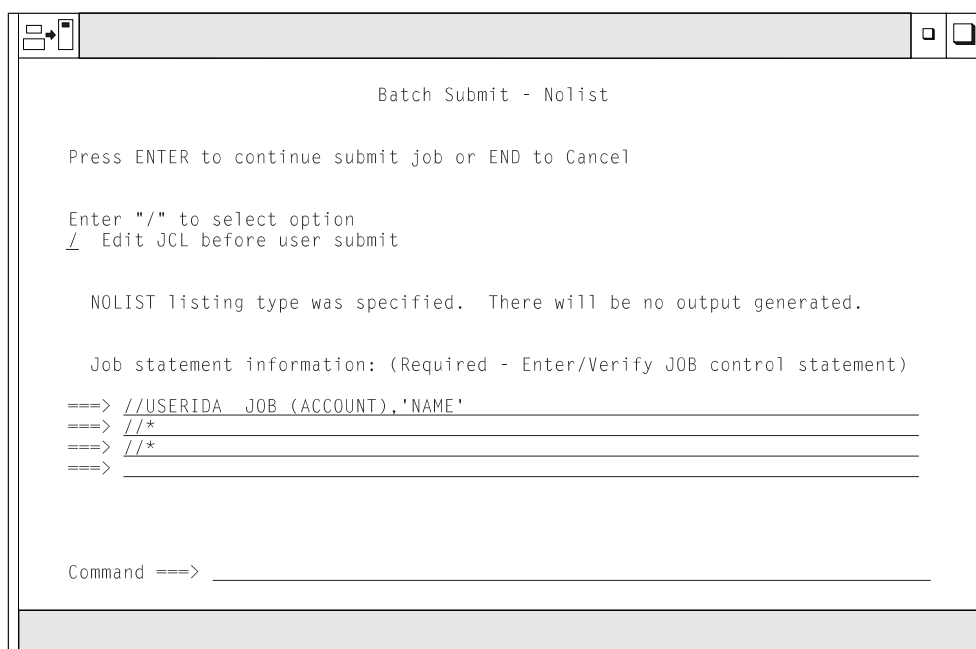
```
MOD
```

Note: These three fields are independent of one another. Also, none of them requires you to provide an OUTDD card in the **Job statement information** field.

Using the NOLIST Listing Type in Batch Mode

If you enter the NOLIST listing type and choose batch mode, the options on the SuperC Utility - Submit Batch Jobs panel shown in Figure 119 on page 199 are not valid because no listing is produced. Therefore, an alternate panel is displayed, which blanks out the fields that are not valid but still allows you to submit job statement JCL. This panel is shown in Figure 120 on page 202.

SuperC Utility (Option 3.12)



```
Batch Submit - Nolist

Press ENTER to continue submit job or END to Cancel

Enter "/" to select option
/ Edit JCL before user submit

NOLIST listing type was specified. There will be no output generated.

Job statement information: (Required - Enter/Verify JOB control statement)

==> //USERIDA JOB (ACCOUNT),'NAME'
==> //*
==> //*
==>

Command ==> 
```

Figure 120. SuperC Utility - Submit Batch Jobs Panel using NOLIST (ISRSCSB1)

When this panel is displayed, you can either:

- Type the job statement JCL and press Enter to submit the job
- Enter the END command to cancel the job.

SuperCE Utility (Option 3.13)

The SuperCE utility (option 3.13) is a dialog that uses the SuperC program to compare data sets of unlimited size and record length at the file, line, word, or byte level. It is appropriate if you need more flexibility than the standard SuperC utility (option 3.12) provides.

Note: For an introduction to the SuperC and SuperCE utilities (options 3.12 and 3.13), see “Appendix A. SuperC Reference” on page 387.

The panel shown in Figure 121 on page 203 is the first panel of the SuperCE utility. It requires only the names of the input data sets, which are entered using standard TSO naming conventions, such as:

New DS Name 'USERID.TEST2.SCRIPT'

Note: In this context, a *new* data set is an updated version of a previously created data set, such as a data set in your private library that has not yet been promoted.

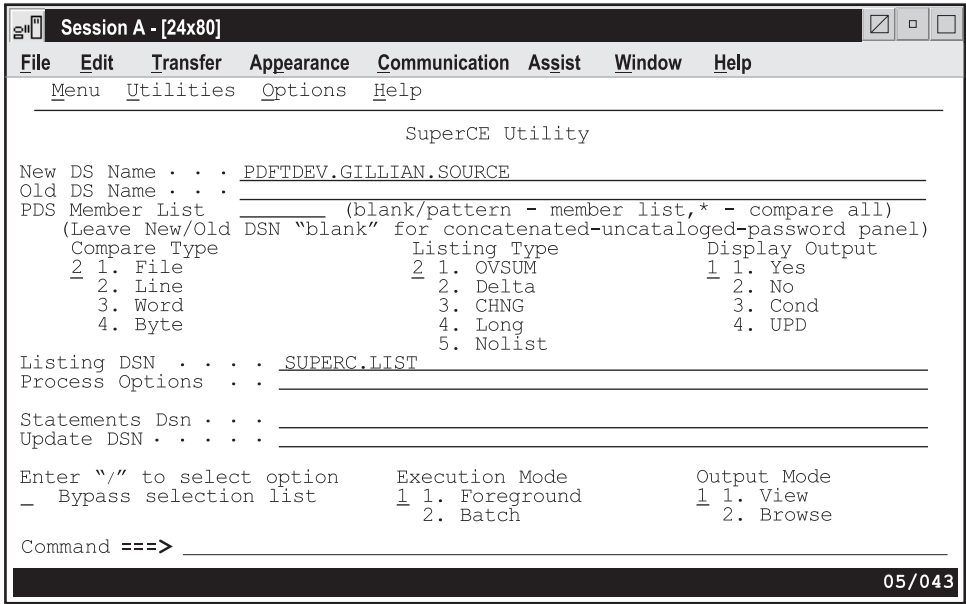


Figure 121. SuperCE Utility Panel (ISRSEPRI)

SuperCE Utility Panel Action Bar

The SuperCE Utility panel action bar choices function as follows:

- | | |
|------------------|--|
| Menu | See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down. |
| Utilities | See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down. |
| Options | The Options pull-down offers you the following choices:
<ul style="list-style-type: none">1 Edit Statements2 Process Options3 Profiles and Defaults |
| Help | The Help pull-down offers you the following choices:
<ul style="list-style-type: none">1 General2 SuperCE functions3 Appendices4 Index |

SuperCE Utility Panel Fields

A default compare type, listing type, listing data set name, and Browse option are provided if you choose not to specify your own. The fields on the SuperCE Utility panel are:

New DS Name and Old DS Name

Specify the name of a sequential data set, PDS, or membered PDS. Use standard TSO naming conventions, including quotes for fully qualified names. Leave either or both of these fields blank to display a panel on which you can specify concatenated, uncataloged, and password-protected

SuperCE Utility (Option 3.13)

data sets. These panels are shown in Figure 122 on page 208 (foreground compare) and Figure 123 on page 209 (batch compare).

PDS Member List

Leave this field blank to display a member selection list for the new data set. Otherwise, enter one of the following. See “SuperC Member Lists” on page 197 for more information.

pattern Entering a pattern causes ISPF to display a list of the members in the new data set that match the pattern, unless *Bypass Selection List* has been specified. See the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about using patterns. For example:

```
PDS Member List . . ISR*
```

***** Entering an asterisk causes all the members in the new data set to be compared to any like-named members in the old data set. A member list is not displayed. For example:

```
PDS Member List . . *
```

Members in either data set not having like-named members in the other data set are not compared, but are listed in the output list data set.

When entire data sets are compared by using an asterisk for a member name pattern, each real member that appears in both the old and new data sets is compared once. Alias entries are processed but only to determine if they have matching alias and/or real entries.

Note: You can also use SELECT process statements in the statements data set to specify an optional set of PDS members to be searched. However, the SELECT statement turns off the PDS member list function.

Compare Type

The type of comparison you want SuperC to perform. Choose one of the following:

File Compares source data sets for differences, but does not show what the differences are. This is the simplest and fastest method with the least amount of processing overhead. For this compare type, SuperC prepares summary information only and causes all listing types to produce the same output, except NOLIST, which does not produce any output listing. A message is returned to notify you of the compare results.

Line Compares source data sets for line differences. Reformatted lines (that is, lines with blanks inserted or deleted) are automatically detected for lines ≤ 256 characters. This compare type is the default. It is most useful for comparisons of program source code because it is record-oriented and points out inserted or deleted lines of code. Lines can be of unlimited size.

Word Compares source data sets for word differences. In this context, a *word* is a group of characters that begins and ends with a blank or other line delimiter. If you use the XWDCMP process option, all

non-alphanumeric characters are considered to be delimiters. Also, a word cannot be longer than 256 characters.

The Word compare type is most useful for comparing text data sets. If two data sets contain the same words in the same order, SuperC considers them to be identical, even if those words are not on the same lines.

Byte Compares source data sets for byte differences. The output listing data set consists of a hexadecimal printout with character equivalents listed on the right. A BYTE compare with a LONG listing of a data set against itself results in a hexadecimal dump of that data set. This compare type is most useful for comparing machine readable data.

Listing Type

The type of listing you want SuperC to create when it compares the data sets. **Listing Type** is not a required field in SuperCE. If you do not specify a listing type, the default is DELTA. See the **Listing Formats** appendix of the *ISPF User's Guide Volume I* for sample listings.

OVSUM	Lists only the general summary of the comparison. However, a PDS comparison generates an individual summary line for each PDS member.
Delta	Lists the differences between the source data sets, followed by the general summary.
CHNG	Lists the differences between the source data sets, plus up to 10 matching lines before and after the differences. This listing is a variation of the DELTA listing; the matching lines before and after help you recognize changed areas of the source data sets.
Long	Lists all the new data set source lines, plus old data set deleted lines. Both inserted and deleted lines are flagged.
Nolist	Produces no listing output. In foreground mode, a message is returned to show the outcome of the comparison.

Listing Dsn

The name of the list data set to which SuperC writes the results of the comparison. However, if you enter NOLIST in the **Listing Type** field, SuperC does not create an output listing, so this name is ignored.

If you leave this field blank, SuperC allocates a list data set, using default data set attributes and the following data set name:

```
prefix.userid.SUPERC.LIST
```

where *prefix* is your TSO prefix and *userid* is your user ID. If your prefix and user ID are identical, only your prefix is used. Also, if you do not have a prefix, only your user ID is used.

If you enter a fully qualified data set name SuperC uses it as specified. Otherwise, SuperC only appends your TSO prefix to the front of the data set name specified. If you run with TSO PROFILE NOPREFIX, SuperC uses the name as you entered it, which can result in an attempt to catalog the name in the master catalog.

SuperCE Utility (Option 3.13)

If you enter the name of a data set that already exists, the contents of that data set are replaced by the new output listing. However, if the data set is sequential, you can add this listing to the data set instead of replacing it by using the APNDLST process option.

If you enter the name of a data set that does not exist, SuperC allocates it for you. The data set is allocated as a sequential data set unless you enter a member name after it, in which case it is allocated as a member of a partitioned data set.

Process Options

Keywords that tell SuperC how to process the compare operation. You can type these keywords in the **Process Options** fields or select them from a panel. See the Process Options selection in “Process Options - Select Process Options” on page 209 for a table of keywords.

Statements Dsn

The name of the data set that contains your process statements. All statements data sets must be fixed block with 80-byte records (FB 80). See the Edit Statements selection in “Process Options - Select Process Options” on page 209 for more information.

Update Dsn

Tells SuperC the name of the data set that will contain column-oriented results of the comparison. This data set is normally used as input to post processing programs and can be specified besides the normal listing data set.

If you leave this field blank and use an update (UPDxxxx) option, SuperC uses the following default name:

`prefix.userid.SUPERC.UPDATE`

where *prefix* is your TSO prefix and *userid* is your user ID. If your prefix and user ID are identical, only your prefix is used. Also, if you do not have a prefix, only your user ID is used.

If you enter a fully qualified data set name SuperC uses it as specified. Otherwise, SuperC only appends your TSO prefix to the front of the data set name specified. If you run with TSO PROFILE NOPREFIX, SuperC uses the name as you entered it, which can result in an attempt to catalog the name in the master catalog.

If you enter the name of a data set that already exists, the contents of that data set are replaced by the new update output. However, if the data set is sequential, you can add this listing to the data set instead of replacing it by using the APNDUPD process option.

If you enter the name of a data set that does not exist, SuperC allocates it for you. The data set is allocated as a sequential data set unless you enter a member name after it, in which case it is allocated as a partitioned data set.

Note: For the UPDMVS8, UPDCMS8, UPDSEQ0, and UPDPDEL process options, the update data set contains valid data, but only after a successful compare when differences are detected. The data set is always empty after a comparison that shows the data sets or members being compared have no differences.

Display Output

Tells ISPF whether or not you want to display the output listing in Browse mode. Enter one of the following:

Note: The NOLIST listing type overrides Yes, No, and Cond.

Yes Call Browse to display the listing data set after processing the comparison. This is the default.

No Do not call Browse to display the SuperC listing data set.

Cond Do not call Browse unless SuperC finds differences between the data sets.

UPD Browse the update data set instead of the list data set. This parameter is not valid unless you create an update data set by using one or more of the SuperC process options that begin with UPD (UPDxxx).

Bypass Selection List

When a member pattern is entered in the PDS Member List field, selecting this field causes SuperC to process all members matching that pattern without displaying a member selection list. Leaving this field blank causes the member list to be displayed.

Output Mode

The output mode for displaying the listing file. Choose one of the following:

- 1 **View.** This enables the listing file to be displayed in *view* mode. All View functions are enabled in this mode.
- 2 **Browse.** This enables the listing file to be displayed in the *browse* mode. All Browse functions are enabled in this mode.

SuperCE Utility Options

The following sections describe the Execution Mode options shown on the SuperCE Utility panel.

Foreground Compare Data Sets

If you choose **Foreground**, SuperC processes the data sets in foreground mode, so you can browse the results of the compare. This choice locks your keyboard until SuperC processing is complete.

The panel shown in Figure 122 on page 208 is displayed if you leave the **Option** field and the **New DS Name** or **Old DS Name** field blank on the SuperCE Utility panel.

SuperCE Utility (Option 3.13)

SuperCE - Concatenation Foreground Entry

"New" Concatenation

DS1 . . . _____
DS2 . . . _____
DS3 . . . _____
DS4 . . . _____

Other "New" Partitioned or Sequential Data Set

Data Set Name . . . _____
Volume Serial . . . _____ (If not cataloged)
Password _____ (Password allowed only in foreground mode)

"Old" Concatenation

DS1 . . . _____
DS2 . . . _____
DS3 . . . _____
DS4 . . . _____

Other "Old" Partitioned or Sequential Data Set

Data Set Name . . . _____
Volume Serial . . . _____ (If not cataloged)
Password _____ (Password allowed only in foreground mode)
Command ==> _____

Figure 122. SuperCE - Concatenation Interactive Entry Panel (ISRSECAT)

For fields **DS1** through **DS4**, both new and old, use normal TSO naming conventions. You can specify a series of concatenated data sets, an uncataloged or password-protected data set, or a cataloged data set.

Up to four data sets can be concatenated for both the new and old input data sets. Make sure the data sets are concatenated in the proper sequence, as follows:

1. If two or more sequential data sets are concatenated as one input data set, the data set attributes, such as block size, must be identical.
2. PDS concatenations must have the data set with the largest block size as the first in any concatenation.
3. The SuperCE dialog uses only the first occurrence of a member in the concatenated series of PDSs as source input for a compare. Any other occurrences of the member are ignored.

Other partitioned or sequential data sets, volume serials, and data set passwords are specified as on any other data entry panel. See the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.

Note: The **Password** fields apply only to the other partitioned or sequential data sets. TSO prompts you if any concatenated data sets are password-protected. The Password field is only enabled in foreground mode.

Batch Submit Batch Data Set Compare

Option B causes SuperC to process the data sets in batch mode. This choice frees the keyboard, allowing you to continue using ISPF while waiting for SuperC to compare the data sets. The output listing is sent to the destination specified on the SuperC Utility - Submit Batch Jobs panel (Figure 119 on page 199).

The panel shown in Figure 123 on page 209 is displayed if you select option B and leave the **New DS Name** or **Old DS Name** field blank on the SuperCE Utility

panel. You can concatenate up to four data sets that have like attributes. For example, all must be either sequential or partitioned.

SuperCE - Concatenation Batch Entry

"New" Concatenation

DS1 . . . _____
 DS2 . . . _____
 DS3 . . . _____
 DS4 . . . _____

Other "New" Partitioned or Sequential Data Set

Data Set Name . . . _____
 Volume Serial . . . _____ (If not cataloged)
 Password _____ (Password allowed only in foreground mode)

"Old" Concatenation

DS1 . . . _____
 DS2 . . . _____
 DS3 . . . _____
 DS4 . . . _____

Other "Old" Partitioned or Sequential Data Set

Data Set Name . . . _____
 Volume Serial . . . _____ (If not cataloged)
 Password _____ (Password allowed only in foreground mode)
 Command ==> _____

Figure 123. SuperCE - Concatenation Batch Entry Panel (ISRSECAT)

This panel is the same as the panel shown in Figure 122 on page 208, except the **Password** field is omitted. If your data sets are password protected, compare the data sets in foreground mode by leaving the **Option** field on the SuperCE Utility panel blank.

Printing a SuperCE Listing in Batch Mode: If you selected option B on the SuperCE Utility panel, the panel shown in Figure 119 on page 199 is displayed before the job is submitted. This panel allows you to determine whether to print your SuperC listing or write it to a list data set.

Process Options - Select Process Options

The compare type that you select determines the available process options, which are listed in Table 18 on page 210.

SuperCE Utility (Option 3.13)

Table 18. SuperCE Process Options

Line Compare:										
ALLMEMS	ANYC	APNDLST	APNDUPD	CKPACKL	CNPML	COBOL	COVSUM	DLMDUP	DLREFM	
DPACMT	DPADCM	DPBLKCL	DPCBCMT	DPCPCMT	DPFTCMT	DPMACMT	DPPLCMT	DPPSCMT		
FMVLNS	GWCBL	LOCS	LONGLN	MIXED	NARROW	NOPRTCC	NOSEQ	NOSUMS		
REFMOVR	SEQ	UPDCMS8	UPDCNTL	UPDLDEL	UPDMVS8	UPDPDEL	UPDREV	UPDREV2		
UPDSEQ0	UPDSUMO	WIDE	Y2DTONLY							
Word Compare:										
ALLMEMS	ANYC	APNDLST	APNDUPD	CKPACKL	COBOL	COVSUM				
DPACMT	DPADCM	DPBLKCL	DPCBCMT	DPCPCMT	DPFTCMT	DPMACMT	DPPLCMT	DPPSCMT		
GWCBL	LOCS	MIXED	NOPRTCC	NOSEQ	NOSUMS	SEQ				
UPDCNTL	UPDREV	UPDREV2	UPDSUMO	XWDCMP						
Byte Compare:										
ALLMEMS	APNDLST	APNDUPD	COVSUM	LOCS						
NOPRTCC	NOSUMS	UPDCNTL	UPDSUMO							
File Compare:										
ALLMEMS	APNDLST	COVSUM	FMSTOP							
LMCSFC	LOCS	NOPRTCC								

To select one or more SuperCE process options, do either of the following:

- Type any non-blank character to the left of a process option(s). If move + or move -+ is shown, use your Backward and Forward keys to move through the panel. Press Enter when you finish selecting options. This causes the options you chose to be displayed in the **Process Options** fields on the SuperCE Utility panel. If you select two options that cannot be chosen together, or if you enter an option name incorrectly, an error message is displayed.
- Use the CANCEL command to return to the SuperCE Utility panel without processing selections.

SuperC process options can affect how the input data is processed, and determine the format and content of the output listing data set. They can also help you save processing time by avoiding comments and blank lines. A separate group of options, called update data set options (UPDxxxx), allow you to create update data sets, examples of which are shown in “Update Data Set Control Output Examples” on page 474.

All these options can be chosen from the XXXX Compare Process Options panels, where XXXX is the compare type (FILE, LINE, WORD, or BYTE) that you are using. The only exception is that the DPxxxx (do not process) options are not available from a selection panel when you are conducting a WORD comparison. However, you can type any of them in the **Process Options** field on the SuperCE Utility panel. Errors caused by mistyping process options are detected when you call the SuperCE utility.

For definitions of the SuperC process options, see “SuperC Compare Process Options” on page 391.

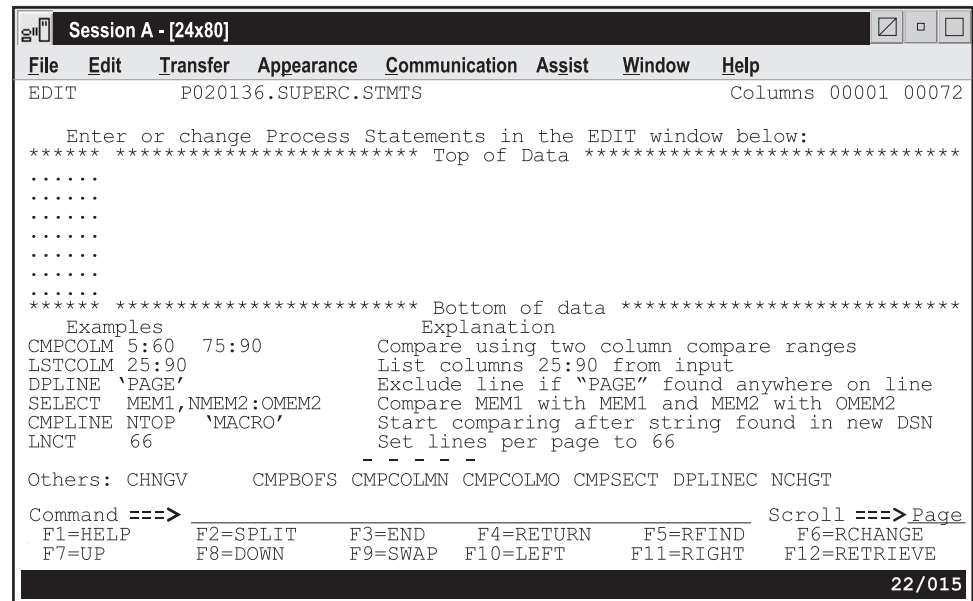
Edit Statements - Edit Statements Data Set

A statements data set consists of process statements that contain instructions for the SuperC program. They are similar to the process options, but are composed of a keyword and one or more operands. See “Process Options - Select Process Options” on page 209 for information about SuperCE process options.

When you select the Edit Statements option from the SuperCE Utility pull-down menu, the SuperCE utility displays the statements data set you specified in the

Statements Dsn field. This data set is always displayed in Edit mode, allowing you to add, change, or delete SuperC process statements as needed. Only one process statement can appear on each line of the statements data set.

The size of the Edit window depends on the number of lines your terminal can display. The sample panel shown in Figure 124 shows how the Edit window appears on a 24-line display. Examples of some common process statements are listed below the Edit window so you can easily compose the proper input line.



```

Session A - [24x80]
File Edit Transfer Appearance Communication Assist Window Help
EDIT P020136.SUPERC.STMTS Columns 00001 00072

Enter or change Process Statements in the EDIT window below:
***** ***** Top of Data *****
.....
.....
.....
.....
.....
.....
***** ***** Bottom of data *****

Examples
CMPCOLM 5:60 75:90 Compare using two column compare ranges
LSTCOLM 25:90 List columns 25:90 from input
DPLINE 'PAGE' Exclude line if "PAGE" found anywhere on line
SELECT MEM1,NMEM2:OMEM2 Compare MEM1 with MEM1 and MEM2 with OMEM2
CMPLINE NTOP 'MACRO' Start comparing after string found in new DSN
LNCT 66 Set lines per page to 66

Others: CHNGV CMPBOFS CMPCOLMN CMPCOLMO CMPSECT DPLINEC NCHGT

Command ==>
F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=RCHANGE
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

22/015

```

Figure 124. SuperC Process Statements Panel (ISRSEPRS)

The SuperC program validates process statements at run time. Invalid process statements are not used and are noted at the bottom of the listing. Unless a higher return code is required by some other condition, a return code of 4 is generated.

See “SuperC Compare Process Statements” on page 403 for process statement syntax, definitions, and examples.

Profiles and Defaults - Activate Profiles and Defaults

A SuperC profile is a data set that can contain a compare type, a listing type, a Browse setting, and various combinations of process options and process statements that you select.

SuperC profiles are useful for a wide range of users. Beginners can use profiles created by others as a simple method of running SuperC. Experienced SuperC users can create profiles for the groups of options they use often so that they do not have to remember individual process options and statements. Also, profiles give system programmers a mechanism for setting up complex compare tools that others can simply call by profile name.

Some other characteristics of profiles are:

- A profile can be either a sequential data set or a member of a PDS.
- Data set names are not represented in a profile.

SuperCE Utility (Option 3.13)

- Profiles can be created only with the SuperCE utility (option 3.13). However, once they are created, they can be used in the standard SuperC utility (option 3.12).
- To change a profile, activate it and make the necessary changes to the information in the fields on the SuperCE Utility panel. Then select option C and create a profile, entering in the **Activate/Create Profile DS Name** field the name of the profile data set that you want to modify.
- You can modify the SuperC default settings by selecting the Defaults option on the Profile Manager screen. See Figure 127 on page 215 for an example of the SuperC - Defaults panel.
- You can display the contents of a profile data set using View, Browse, or Edit. Figure 125 shows a Browse display of a profile data set.

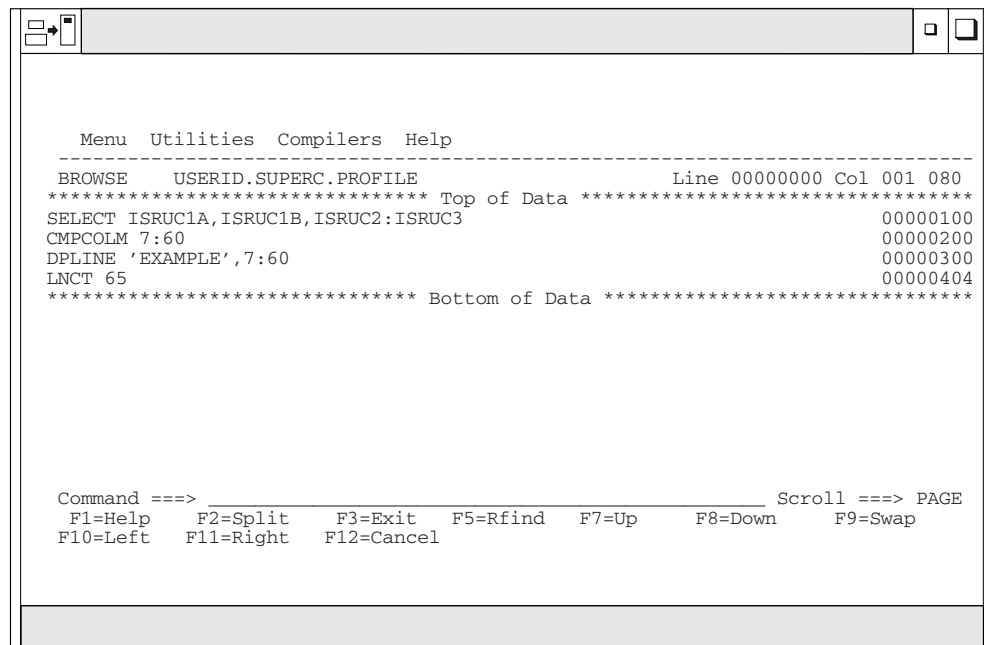


Figure 125. Browse A SuperCE Profile

Selecting option A on the SuperCE Utility panel displays the panel shown in Figure 126. This panel is used to activate and create profiles.

```

SUPERCE - Profile Manager

A - Activate - Reads the specified input profile data set:
    1. Establishes the process and compare options from the profile
       prefix lines.
    2. Establishes the profile as the process statement data set if
       any process statements are detected.

C - Create   - Creates an output profile data set:
    1. Combines process and compare options from the Primary Panel
       and any process statements from the Statements Data Set
       SUPERC.STMTS
    2. Rewrites the profile data set (if the data set exists) or
       allocates a new data set before generating the profile.

D - Defaults - Presents panel for modifying SuperC defaults.

Activate/Create
Profile DS Name . . . _____

Option ==> _____
F1=Help   F2=Split  F3=Exit   F9=Swap   F12=Cancel

```

Figure 126. SuperCE - Profile Manager Panel (ISRSEPMG)

The only field on this panel is:

Activate/Create Profile DS Name

The name of the profile data set that you want to either activate or create. This field is required.

If you choose option A (Activate), SuperCE copies the compare type, listing type, Browse setting, and any process options this data set contains. If the profile also contains process statements, SuperCE displays the name of the profile data set in the **Statements Dsn** field on the SuperCE Utility panel.

If you choose option C (Create), SuperCE copies the information that is saved into one output data set or member.

The following sections describe the options shown at the top of the SuperCE - Profile Manager panel.

A — Activate: Option A (Activate) restores the contents of the profile data set specified in the **Activate/Create Profile DS Name** field. This data set must be cataloged. When you press Enter, information that was stored in the profile data set when it was created is displayed in the corresponding fields on the SuperCE Utility panel. For example, process options stored in the profile appear in the **Process Options** fields. At this point, you can make additional changes or choose another option.

C — Create: Option C (Create) causes SuperCE to copy data entered on the SuperCE Utility panel and place it in the profile data set specified in the **Activate/Create Profile DS Name** field. Be sure the correct information is displayed on that panel and that the statements data set, if you specify one, contains the correct process statements before you create the profile.

If the profile data set that you specify does not already exist, SuperCE allocates it for you. Data stored in the profile data set can include:

SuperCE Utility (Option 3.13)

- The following values taken from the fields on the SuperCE Utility panel. The abbreviations in parentheses show how these values are identified in a profile data set:
 - Compare type (CTYP)
 - Listing type (LTYP)
 - Browse setting (BRW)
 - Process options (PROC1 and PROC2).
- Process statements copied from the statements data set that was specified in the **Statements Dsn** field. This data set name is displayed and highlighted on the SuperCE - Profile Manager panel. For example, the sample panel shown in Figure 126 on page 213 displays the name SUPERC.STMTS.

If you leave the **Statements Dsn** field blank, the data set name and the words preceding it are not displayed on the SuperCE - Profile Manager panel and SuperCE does not include any process statements in your profile. See the following sections for information about process options and process statements, respectively:

 - “Process Options - Select Process Options” on page 209
 - “Edit Statements - Edit Statements Data Set” on page 210.

D — Defaults: Option D (Defaults) brings up an additional panel, shown in Figure 127 on page 215, that allows you to do the following:

- Specify SuperC output data set default allocation parameters

The first extent and secondary space values are used whenever Options 3.12, 3.13, or 3.14 create a new output data set such as a listing or statements data set. If you specify a new data set with a member name, the directory space value is used to create a PDS. If you blank out any of the values, SuperC will supply defaults.

Space values are applicable only if you select **Invoke SuperC via PROGRAM interface**.

Note: New data set allocation block size parameters are controlled by the PDF Configuration Table. See the *ISPF Planning and Customizing* manual for details.
- Specify your own Statements data set initial edit macro name
- Enable or disable a new high performance program interface to SuperC. If you select **Invoke SuperC via PROGRAM interface**, ISPF invokes SuperC directly. Otherwise, ISPF invokes SuperC via a CLIST named ISRSFORG (ISRSSRCH for Search-For). The CLIST interface may be useful if you need to customize the allocations or wish to post-process the result. The PROGRAM interface is more efficient and is the default.

```

SUPERC - Defaults

Verify entries below.  End or Enter to exit.

New List data set allocation in blocks:
1st Extent. . . 50__ Secondary. . . 100__ Directory. . . 5__

New Update data set allocation in blocks:
1st Extent. . . 15__ Secondary. . . 30__ Directory. . . 5__

New Profile data set allocation in blocks:
1st Extent. . . 5__ Secondary. . . 5__ Directory. . . 5__

New Statements data set allocation in blocks:
1st Extent. . . 5__ Secondary. . . 5__ Directory. . . 5__

Statements data set initial edit macro name. . . !ISRSMAC

Enter "/" to select option
/ Invoke SuperC via PROGRAM interface

Command ==> _____
F1=Help   F2=Split   F3=Exit   F9=Swap   F12=Cancel

```

Figure 127. SuperC - Defaults Panel (ISRSDFLT)

Search-For Utility (Option 3.14)

Note: For an introduction to the Search-For and Extended Search-For utilities (options 3.14 and 3.13.S), see “Appendix A. SuperC Reference” on page 387.

The Search-For utility (option 3.14) is a dialog that uses the SuperC program to search your data sets or PDS members for one or more character strings. The Search-For Utility panel, shown in Figure 128 on page 216, is the first panel of the Search-For utility. The only requirements for this panel are:

- A string to be searched for, unless you select **Specify additional search strings**
- A data set to search, along with a volume serial and password if necessary.

A default listing data set name is provided if you choose not to enter your own.

Search-For Utility (Option 3.14)

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu RefList Utilities Help

Search-For Utility

Search String . . . _____

ISPF Library

Project . . . PDFTDEV

Group . . . DANIEL . . . _____ . . . _____ . . . _____

Type . . . SOURCE

Member . . . _____ (Blank or pattern for member selection list, "**" for all members)

Other Partitioned, Sequential or VSAM Data Set

Data Set Name . . . _____

Volume Serial . . . _____ (If not cataloged)

Listing Data Set . . . SRCHFOR.LIST

Data Set Password . . . _____ (If Search-For data set password protected)

Enter "/" to select option

Specify additional search strings

Mixed Mode

Bypass selection list

Command ===> _____

Execution Mode

1 1. Foreground

2. Batch

Output Mode

1 1. View

2. Browse

10/025

Figure 128. Search-For Utility Panel (ISRSFSPR)

Search-For Utility Panel Action Bar

The Search-For Utility panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
RefList	See the Using Personal Data Set Lists and Library Lists chapter of the <i>ISPF User's Guide Volume I</i> for information on referral lists.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers you the following choices: <ol style="list-style-type: none">1 Overview of Search for utility2 Specifying the search data string3 Specifying the data set or members to be searched4 Specifying the data set to contain the results of the search5 Specifying the execution mode and mixed data mode6 Selecting members to search7 Setting batch output parameters8 Appendices9 Index

Search-For Utility Panel Fields

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except the following:

Search String

A string to be searched for. No distinction is made between uppercase and lowercase characters. Use the Extended Search-For utility (option 3.13.S) to specify case-sensitive searches.

Search-For Utility (Option 3.14)

Four keywords—C, PREFIX, SUFFIX, and WORD—can help you narrow the scope of a search. See “Search-For Strings and Keywords” on page 219 for information about these keywords and the rules that govern search string entry.

Specify additional search strings

Select this field to have the Search-For utility search for more than one string. The Search-For utility displays the panel shown in Figure 129 on page 218, on which you can specify additional search strings. This panel precedes a member list request.

If you do not select this option, the Search-For utility searches only for the string entered in the **Search String** field.

Mixed Mode

Select this field to have the Search-For utility scan and parse the input data set lines for DBCS text strings.

Note: The Word, Prefix, and Suffix Search-For qualifiers have no effect on DBCS strings.

Bypass Selection List

When a member pattern is entered in the PDS Member List field or the member name portion of the data set field (such as, MY.DATA.SET(pattern)), selecting this field causes SuperC to process all members matching that pattern without displaying a member selection list. Leaving this field blank causes the member list to be displayed.

Execution Mode

The processing mode you want to use when searching the data sets. Specify one of the following:

- 1 **Foreground.** Searches the data sets and stores the results in the data set specified in the **Listing Data Set Name** field. You can browse the listing data set at the terminal.
- 2 **Batch.** Causes the display of the Search-For Utility - Submit Batch Jobs panel so that you can specify job card and print disposition information or edit the JCL statements. Then, Search-For submits the batch job to search the data sets. See “Submitting a Search-For Job in Batch Mode” on page 220 for more information.

Note: You cannot specify a data set password in batch mode. If your data sets are password protected, use foreground mode.

Output Mode

The output mode you want to use when displaying the listing file. Choose one of the following:

- 1 **View.** This enables the listing file to be displayed in *view* mode. All View functions are enabled in this mode.
- 2 **Browse.** This enables the listing file to be displayed in the *browse* mode. All Browse functions are enabled in this mode.

Listing Data Set

The name of the listing data set to which the SuperC program writes the results of the search. If you leave this field blank, the Search-For utility allocates a listing data set, using default data set attributes and the following data set name:

Search-For Utility (Option 3.14)

prefix.userid.SRCHFOR.LIST

where *prefix* is your TSO prefix and *userid* is your user ID. If your prefix and user ID are identical, only your prefix is used. Also, if you do not have a prefix, only your user ID is used.

If you enter a fully qualified data set name SuperC uses it as specified. Otherwise, SuperC only appends your TSO prefix to the front of the data set name specified. If you run with TSO PROFILE NOPREFIX, SuperC uses the name as you entered it, which can result in an attempt to catalog the name in the master catalog.

If you enter the name of a data set that does not exist, the Search-For utility allocates it for you. The data set is allocated as a sequential data set unless you enter a member name after it, in which case it is allocated as a partitioned data set.

Specifying Additional Search Strings

The panel shown in Figure 129 is displayed if you select **Specify additional search strings** on the Search-For Utility panel. You can specify:

- Additional strings to be searched for
- Optional scan-type and continuation keywords.

The screenshot shows a terminal window titled "Search-For Strings" with a menu bar containing "Menu", "RefList", "Utilities", and "Help". The main area contains the text "Specify 1 or more Search Strings below:" followed by ten input lines, each preceded by "==>". Below these is the instruction "Press ENTER to start search or END command to exit." At the bottom, there is a "Command ==>" prompt with an input line.

Figure 129. Additional Search Strings Panel (ISRSFSST)

From this panel, pressing Enter either:

- Displays a member list, if requested
- Runs the search if no member list is needed.

Entering the END command returns you to the Search-For Utility panel.

Search-For Strings and Keywords

Enter the strings that you want SuperC to find. When you press Enter, SuperC looks for the strings without regard to whether they appear in uppercase or lowercase in the original data set. If you are searching a partitioned data set concatenation, SuperC will inform you (in the CONCAT# field in the listing) in which group it first found the string. If you want SuperC to search all the groups for each member, you can use the SDUPM process option of Extended Search-For (option 3.13.S). If you want the search to distinguish between uppercase and lowercase, you must use the Extended Search-For utility (option 3.13.S). If any of the strings are found (string-1 OR string-2 OR string-3) on the line, SuperC considers the condition met. You can restrict SuperC searches further by using one of the SuperC Search-for keywords discussed below.

Entering Search Strings

Enclose the string in single quotation marks if it contains imbedded blanks or apostrophes. Two consecutive apostrophes must be entered to specify a single apostrophe within a search string.

If you need to specify a DBCS string that contains a hexadecimal '7D' (x'7D', the hexadecimal representation of a single quotation mark) as half of a DBCS pair, you must use the Enhanced SearchFor option (option 3.15) with the MIXED process option.

The following example searches for the string IT'S A LIVING.

```
==> 'IT'S A LIVING'
```

Using Keywords

The following keywords can help you narrow the range of the search. If you do not use a keyword, SuperC will find the string wherever it exists, even if that happens to be in the middle of a word.

PREFIX	Shows the string is preceded by a non-alphanumeric character, such as a blank space. It cannot be used on the same line with SUFFIX or WORD. For example, you can do this: ==> ELSE PREFIX ==> ELSE SUFFIX but not this: ==> ELSE PREFIX SUFFIX
SUFFIX	Shows the string is followed by a non-alphanumeric character. It cannot be used on the same line with PREFIX or WORD. See the examples under PREFIX.
WORD	Shows the string is preceded and followed by a non-alphanumeric character. It cannot be used on the same line with PREFIX or SUFFIX. See the examples under PREFIX.
C	Continuation. Shows continuation of the previous line(s). Continuation lines generate additional strings, all of which must be found in the same line of an input data set. Also, the C keyword can be entered on the same line as one of the other keywords. The following example tells SuperC to find ELSE and to also find IF, but only when IF is on the same line as ELSE. ==> ELSE WORD ==> IF WORD C

Search-For Utility (Option 3.14)

Search-For Member Lists

A panel similar to the one shown in Figure 130 is displayed only if:

- The search data set is partitioned.
- The **Member** field on the Search-For Utility panel (Figure 128 on page 216) or the *PDS Member List* field on the Extended Search-For Utility panel (Figure 132 on page 222) was left blank or a pattern was used and *Bypass Selection List* was not selected. See the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about displaying member lists.
- For the Extended Search-For utility (option 3.13.S), the statements data set being used does not contain any SELECT process statements.

Name	Prompt	Size	Created	Changed	ID
• \$FORMAT		386	1997/09/12	1997/09/12 10:02:33	PDFTOOL
• A		10	1998/07/23	1998/07/23 16:11:00	P020136
• B		10	1998/07/23	1998/07/23 15:51:00	P020136
• BIFF		1	1998/11/03	1998/11/03 18:34:36	PDFTOOL
• BUBBA		1	1999/02/10	1999/02/10 16:19:12	P020136
• CDATE		144	1981/03/30	1999/02/25 14:57:31	P020136
• CDATEDCL		66	1981/03/30	1999/02/25 14:56:54	P020136
• CHKLMOD		35	1998/10/14	1998/10/14 08:55:55	PDFTOOL
• COPIER		41	1997/10/06	1997/10/16 15:19:50	P020136
• FLAG		2	1998/02/04	1998/02/04 14:55:54	PDFTOOL
• FLM		26	1996/10/31	1997/01/20 13:28:59	SHELLY
• FILMCXGPD		206	1988/10/04	1999/03/15 15:48:44	P020136
• FORTRAN		709	1990/10/17	1992/02/05 12:49:50	P020136

Command ==> F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=RCHANGE
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

22/015

Figure 130. Search Member List Panel (ISRSSML)

To start the search, enter the END command.

To cancel your selections, enter either:

- The RESET command to remove all unprocessed selections without ending the member list display
- The CANCEL command to end the member list display without processing selections still on the screen.

Note: Both the jump function (=) and the RETURN command cause an implied cancellation of selections before they are carried out.

For more information about member lists, see the **Using Member Selection Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*.

Submitting a Search-For Job in Batch Mode

If you selected Batch Mode (2) on the Search-For Utility panel, the panel shown in Figure 131 on page 221 is displayed before the job is submitted.

Search-For Utility (Option 3.14)

Search-For Utility - Submit Batch jobs

Press ENTER to continue submit

Enter "/" to select option
/ Edit JCL before user submit

Generate Output Type:
1 1. SYSOUT Class
2 2. Data Set Name
3 3. //OUTDD DD

SYSOUT Class A _____

Data Set Name _____

//OUTDD DD _____

// _____

LRECL for the Listing Output will be 133

Job statement information: (Required - Enter/Verify JOB control statement)

====> //USERIDA JOB (ACCOUNT),'NAME'

====> /*

====> /*

====> _____

Command ====> _____

Figure 131. Search-For Utility - Submit Batch Jobs Panel (ISRSFSUB)

This panel allows you to specify one of the following Generate Output types:

- The SYSOUT class, which determines the printer to which your job is sent and the format used for the printed output
- The name of a listing data set
- Output data definitions that you can use to give the printer additional instructions, such as an output destination that is not defined by a SYSOUT class.

The **Job Statement information** field is explained under the **Job Statement Information** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*. The other fields on this panel, as well as the options listed at the top of the panel, are described in "Submitting a SuperC Job in Batch Mode" on page 199.

Search-ForE Utility (Option 3.15)

Note: For an introduction to the Search-For and Extended Search-For utilities, see Appendix A. SuperC Reference.

If you select option 3.15, the Extended Search-For Utility panel, shown in Figure 132 on page 222, is displayed. This utility is a dialog that uses the SuperC program to search your data sets or PDS members for one or more character strings. It is appropriate if you need more flexibility than the standard Search-For utility (option 3.14) provides.

Search-ForE Utility (Option 3.15)

The screenshot shows a terminal window titled "Session A - [24x80]". The menu bar includes File, Edit, Transfer, Appearance, Communication, Assist, Window, and Help. Below the menu bar, there are sub-menus: Menu, Utilities, Options, and Help. The main content area is titled "Extended Search-For Utility". It contains several input fields and labels: "Search DS Name" with the value "PDFDEV.JAMIE.SOURCE", "PDS Member List" with a blank field and a note "(blank/pattern - member list,* - search all)", a note "(Leave Search DSN 'blank' for concatenated-uncataloged-password panel)", "Enter Search Strings and Optional operands (WORD/PREFIX/SUFFIX,C)" with fields for "Caps" (value "MOMMA") and "Asis" (blank), "Listing DSN" with the value "SRCHFOR.LIST", "Process Options" with a blank field, and "Statements Dsn" with a blank field. At the bottom, there are three columns of options: "Enter '/' to select option", "Execution Mode" (1. Foreground, 2. Batch), and "Output Mode" (1. View, 2. Browse). A "Command ===>" prompt is at the bottom left, and the page number "11/016" is at the bottom right.

Figure 132. Extended Search-For Utility Panel (ISRSFPRI)

Search-ForE Utility Panel Action Bar

The Search-ForE Utility panel action bar choices function as follows:

- | | | | | | | | |
|------------------|---|---|-------------------------------|---|-----------------|---|-------|
| Menu | See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down. | | | | | | |
| Utilities | See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down. | | | | | | |
| Options | <table border="0"><tr><td>1</td><td>Edit statements</td></tr><tr><td>2</td><td>Process options</td></tr></table> | 1 | Edit statements | 2 | Process options | | |
| 1 | Edit statements | | | | | | |
| 2 | Process options | | | | | | |
| Help | The Help pull-down offers you the following choices: <table border="0"><tr><td>1</td><td>Extended Search-For functions</td></tr><tr><td>2</td><td>Appendices</td></tr><tr><td>3</td><td>Index</td></tr></table> | 1 | Extended Search-For functions | 2 | Appendices | 3 | Index |
| 1 | Extended Search-For functions | | | | | | |
| 2 | Appendices | | | | | | |
| 3 | Index | | | | | | |

Search-ForE Utility Panel Fields

The panel requires only the entry of character string(s). The fields on this panel are:

Search DS Name

Specify the name of a sequential data set, PDS, or membered PDS. Use standard TSO naming conventions, including quotes for fully qualified names. Leave this field blank to display a panel on which you can specify concatenated, uncataloged, and password-protected data sets. This panel is shown Figure 133 on page 225.

PDS Member List

Leave this field blank to display a list of all the members in the

Search-ForE Utility (Option 3.15)

search data set. Otherwise, enter one of the following. See “Search-For Member Lists” on page 220 for more information.

pattern

Entering a pattern causes ISPF to display a list of the members in the search data set that match the pattern unless *Bypass Selection List* was selected. See the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about using patterns. For example:

```
PDS Member List . . . ISR*
```

- * Entering an asterisk causes all the members in the search data set to be searched.

You can also use SELECT process statements in the statements data set to specify an optional set of PDS members to be searched. However, the SELECT statement turns off the PDS member list function.

CAPS

A search string that you want the Extended Search-For utility to find. This search string is converted to uppercase before the search begins and is found only if it exists in the search data set in uppercase.

The ANYC process option causes the string to be found in any case, (uppercase, lowercase, or mixed case) even if you enter the string in the **CAPS** field.

You can enter up to three uppercase search strings, one in each **CAPS** field. Here are some examples:

example 1

Either of the following strings may be found in the search data set:

```
CAPS . . . . THEN  
CAPS . . . . IF
```

example 2

The following two strings must be found on the same line because of the continuation (C) keyword. THEN must be a complete word, while ISR must be the prefix of a word.

```
CAPS . . . . THEN WORD  
CAPS . . . . ISR PREFIX C
```

example 3

In the next example, a hexadecimal string is specified as the search string. Use this to find unprintable characters.

```
CAPS . . . . X'7B00'
```

example 4

The following example searches for the string JOE'S CLIST. Notice that the string is enclosed in single quotation marks and the apostrophe following Joe's name has been doubled.

```
CAPS . . . . 'JOE'S CLIST'
```

ASIS

A search string that you want the Extended Search-For utility to find. This search string is searched for as it is when you enter it in the **ASIS** field. Therefore, the Extended Search-For utility does not

Search-ForE Utility (Option 3.15)

find the string unless it exists in the data set exactly as you enter it in an **ASIS** field. You can enter one search string in each **ASIS** field.

The examples following the **CAPS** field definition apply to the **ASIS** field as well.

See “Search-For Strings and Keywords” on page 219 for a list of rules that determine the format required for entering search strings and for definitions of the keywords that are shown in the examples below.

The SRCHFOR and SRCHFORC process statements override any strings entered in the **CAPS** and **ASIS** fields.

Listing DS Name

The name of the list data set to which the Extended Search-For utility writes the listing information. If you leave this field blank, Extended Search-For allocates a list data set, using default data set attributes and the following data set name:

```
prefix.userid.SRCHFOR.LIST
```

where *prefix* is your TSO prefix and *userid* is your user ID. If your prefix and user ID are identical, only your prefix is used. Also, if you do not have a prefix, only your user ID is used.

If you enter a fully qualified data set name SuperC uses it as specified. Otherwise, SuperC only appends your TSO prefix to the front of the data set name specified. If you run with TSO PROFILE NOPREFIX, SuperC uses the name as you entered it, which can result in an attempt to catalog the name in the master catalog.

If you enter the name of a data set that already exists, the contents of that data set are replaced by the new listing output. However, if the data set is sequential, you can add this listing to the data set instead of replacing it by using the APNDLST process option.

If you enter the name of a data set that does not exist, Search-For allocates it for you. The data set is allocated as a sequential data set unless you enter a member name after it, in which case it is allocated as a partitioned data set.

Process Options

Keywords that tell SuperC how to process the search-for operation. You can type these keywords in the **Process Options** field or select them from a panel. See “SuperC Compare Process Options” on page 391 for tables of keywords.

Bypass Selection List

When a member pattern is entered in the PDS Member List field, selecting this field causes SuperC to process all members matching that pattern without displaying a member selection list. Leaving this field blank causes the member list to be displayed.

Statements Dsn

The name of the data set that contains your search-for process statements, which you can create or change by using option E on the Extended

Search-For Utility panel. SuperC reads these process statements before conducting the search. All statements data sets must be fixed block with 80-byte records (FB 80).

Execution Mode

Foreground

If you choose option 1, Foreground, and you leave the **Search DS Name** field blank, the Extended Search-For - Concatenation Data Set Entry panel, shown in Figure 133, is displayed.

Figure 133. Extended Search-For - Concatenation Data Set Entry Panel (ISRSFCON)

For fields **DS1** through **DS4**, use normal TSO naming conventions. You can specify a series of concatenated data sets, an uncataloged or password-protected data set, or a cataloged data set name.

Up to four data sets can be concatenated. Make sure the data sets are concatenated in the proper sequence, as follows:

1. If two or more sequential data sets are concatenated as one input data set, the data set attributes, such as block size, must be identical.
2. PDS concatenations must have the data set with the largest block size as the first in any concatenation.
3. Search-For uses only the first occurrence of a member in the concatenated series of PDSs as source input for a search. Any other occurrences of the member are ignored. You may specify the SDUPM process option to cause SuperC to search for and report all occurrences of the string for the entire concatenated series of PDS members.

Other partitioned or sequential data sets, volume serials, and data set passwords are specified as on any other data entry panel. See the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.

Search-ForE Utility (Option 3.15)

Note: The **Password** field applies only to the other partitioned or sequential data set. TSO prompts you if any concatenated data sets are password-protected.

Batch Option 2 causes SuperC to process the data sets in batch mode. This choice frees the keyboard, allowing you to continue using ISPF while waiting for SuperC to search the data sets. The output listing is sent to the destination specified on the Search-For Utility - Submit Batch jobs panel (Figure 131 on page 221).

The panel shown in Figure 134 is displayed if you select option 2 and leave the **Search DS Name** field blank on the Extended Search-For Utility panel. You can concatenate up to four data sets that have like attributes. For example, all must be either sequential or partitioned.

```
Extended Search-For - Concatenation Batch Entry

"Search"  DS1. . . 
Concatenation DS2. . . 
           DS3. . . 
           DS4. . . 

Other "Search" Partitioned or Sequential Data Set:
Data Set Name. . . 
Volume Serial. . . (If not cataloged)

Command ==> 
F1=Help  F2=Split  F3=Exit  F9=Swap  F12=Cancel
```

Figure 134. Extended Search-For - Concatenation Batch Entry Panel (ISRSFCON)

This panel is the same as the panel shown in Figure 133 on page 225, except the **Password** field is omitted. If your data sets are password-protected, search the data sets in foreground mode by leaving the **Option** field on the Extended Search-For Utility panel blank.

Printing an Extended Search-For Listing in Batch Mode

If you selected the Batch option on the Extended Search-For Utility panel, the panel shown in Figure 131 on page 221 is displayed before the job is submitted. This panel allows you to determine whether to print your Search-For listing or write it to a list data set.

Output Mode

The output mode you want to use when displaying the listing file. Choose one of the following:

Search-ForE Utility (Option 3.15)

View This enables the listing file to be displayed in *view* mode. All View functions are enabled in this mode.

Browse

This enables the listing file to be displayed in the *browse* mode. All Browse functions are enabled in this mode.

Select Search-For Process Options

Table 19 lists all of the process options for Search-For.

Table 19. Search-For Process Options

ALLMEMS	ANYC	APNDLST	CKPACKL	COBOL	DPACMT	DPADCMT	DPBLKCL
DPCBCMT	DPCPCMT	DPFTCMT	DPMACMT	DPPLCMT	DPPSCMT	FMSTOP	
IDPFX	LMT0	LNFMTO	LONGLN	LPSF	LTO		
MIXED	NOPRTCC	NOSEQ	NOSUMS	SDUPM	SEQ	XREF	

The following rules govern the selection of Search-For process options:

- Type any non blank character to the left of one or more process options. Then press Enter. This causes the options you specify to be displayed in the **Process Options** field on the Extended Search-For Utility panel. If you select two options that cannot be specified together, or if you enter an option name incorrectly, an error message is displayed. If **more +** or **more -+** is shown, use your Backward and Forward keys to move through the panel.
- Use the CANCEL command to return to the Extended Search-For Utility panel without processing selections.

Search-For process options can affect how the input data is processed, and determine the format and content of the output listing data set. They can also help you save processing time by avoiding comments and blank lines.

All these options except the DPxxxx (do not process) options can be chosen from the Search-For Process Options panel. However, you can type any of them in the **Process Options** field on the Extended Search-For Utility panel. Errors caused by mistyping process options are detected when you call the Extended Search-For utility.

For definitions of the Search-For process options, see “SuperC Compare Process Options” on page 391.

Edit Search-For Statements Data Set

A statements data set consists of process statements that contain instructions for the SuperC program. They are similar to the process options, but are composed of a keyword and one or more operands. See “Select Search-For Process Options” for information about Search-For process options.

When you select option E from the Extended Search-For Utility panel, the Extended Search-For utility displays the statements data set you specified in the **Statements Dsn** field. This data set is always displayed in Edit mode, allowing you to add, change, or delete search-for process statements as needed.

The size of the Edit window depends on the number of lines your terminal can display. The sample panel shown in Figure 135 on page 228 shows how the Edit window appears on a 24-line display. Examples of some common process

Search-ForE Utility (Option 3.15)

statements are listed below the Edit window so you can easily compose the proper input line.

The screenshot shows a terminal window titled "EDIT USERID.SRCHFOR.STMTS" with "Columns 000 000". The window contains the following text:

```
EDIT          USERID.SRCHFOR.STMTS          Columns 000 000

{Enter or change Process Statements in the EDIT window below:
***** ***** Top of Data *****
/ / / / /
/ / / / /
/ / / / /
/ / / / /
/ / / / /
/ / / / /
/ / / / /
/ / / / /
/ / / / /
***** ***** Bottom of Data *****

Examples                                     Explanation
SRCHFOR 'ABCD',W                          Search for the word "ABCD"
SRCHFORC 'DEFG'                          "DEFG" must be on same line as word "ABCD"
CMPCOLM 1:60 75:90                        Search columns 1:60 and 75:90 for string(s)
DPLINE 'PAGE ',87:95                      Exclude line if "PAGE " found in columns 87:99
DPLINE 'PAGE '                          Exclude if "PAGE " found anywhere on line
SELECT MEM1,MEM2                          Search only members MEM1 and MEM2 of PDS
Others: CMLINE DPLINE LNCT LPSFV LSTCOLM NCHGT NTITLE SLIST
Command ==>                               Scroll ==> PAGE
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap       F10=Left     F11=Right     F12=Cancel
```

Figure 135. Search-For Process Statements Panel (ISRSFPRS)

The SuperC program validates the process statements at run time. Invalid process statements are not used and are noted at the bottom of the listing. Unless a higher return code is required by some other condition, a return code of 4 is returned.

For the syntax and examples of the Search-For process statements, see "SuperC Search-For Process Statements" on page 437.

Chapter 5. Foreground (Option 4)

The Foreground option (4) allows ISPF to run the foreground processors shown on the Foreground Selection panel, Figure 136. All these processors, except SCRIPT/VS, COBOL interactive debug, and FORTRAN interactive debug, are also available with the Batch option (5).

When you run a foreground processor, you must wait until the processor ends before doing anything else with ISPF. However, if you want to use ISPF while waiting for the processor to end, submit the input as a batch job. You can do this by using the Batch option if the processor you need is listed on the Batch Selection panel, Figure 166 on page 271.

The screenshot shows the 'Foreground Selection Panel' with a menu bar at the top containing 'Menu', 'Utilities', and 'Help'. Below the menu bar is a list of processors and their options, organized into two columns. The first column lists processors 1 through 10A, and the second column lists processors 11 through 20. Below the list, there is a prompt 'Enter "/" to select option' and a line for 'Source Data Packed'. At the bottom, there is a section for 'Option ===>' with function key assignments: F1=Help, F2=Split, F3=Exit, F7=Backward, F8=Forward, F9=Swap, F10=Actions, and F12=Cancel.

Foreground Selection Panel	
1 Assembler	11 *FORTRAN debug
2 COBOL	12 Member Parts List
3 VS FORTRAN	13 *C/370
5 PLI	14 *REXX/370
6 VS PASCAL	15 *ADA/370
7 *Binder/Link editor	16 *AD/Cycle C/370
9 SCRIPT/VS	18 ISPD TLC
10 *VS COBOL II debug	19 *OS/390 C/C++
10A *OS/VS COBOL debug	20 *z/OS C/C++

Enter "/" to select option
_ Source Data Packed

Option ===>
F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F10=Actions F12=Cancel

Figure 136. Foreground Selection Panel (ISRFP)

The names of the foreground processors on this panel are point-and-shoot fields. See the **Point-and-Shoot Text Fields** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for more information.

Foreground Selection Panel Action Bar

The Foreground Selection Panel action bar choices function as follows:

Menu

See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help

The Help pull-down offers you the following choices:

Foreground (Option 4)

- | | |
|----|--------------------|
| 1 | General |
| 2 | Assembler |
| 3 | COBOL |
| 4 | VS Fortran |
| 5 | PL/I |
| 6 | VS Pascal |
| 7 | Binder/Link editor |
| 8 | SCRIPT VS |
| 9 | VS COBOL II debug |
| 10 | OS/VS COBOL debug |
| 11 | FORTTRAN debug |
| 12 | Member parts list |
| 13 | C/370 |
| 14 | REXX/370 |
| 15 | Ada/370 |
| 16 | AD/Cycle C/370 |
| 17 | ISPD TLC |
| 18 | OS/390 C/C++ |
| 19 | z/OS C/C++ |

Foreground Processing Sequence

The main foreground processing sequence is:

1. If you do not know whether the source data is in packed format, find out by editing the data set and entering the PROFILE command. The profile shows either PACK ON (data is stored in packed format) or PACK OFF (data is not stored in packed format).

If the data is packed, select the Source Data Packed option. If the data is not packed, deselect this option.

Also, you should read “Expanding Packed Data” on page 233, paying close attention to:

- Information that applies to the foreground processor you plan to use
- The difference between expanding a sequential data set and expanding members of a partitioned data set.

When you are satisfied that the data set is ready to be processed, continue with the next step.

2. Select one of the foreground processors listed at the top of the Foreground Selection panel shown in Figure 136 on page 229.

Note: A region size of 2 megabytes or more will probably be required to run the VS FORTRAN compiler in the foreground.

3. Select the Source Data Packed option to tell ISPF if it needs to expand the source data.

Note: The Source Data Packed option has no effect on the Member parts list option (4.12). Member parts list can read both packed and unpacked data sets, so no expansion is needed.

4. When the Session Manager licensed program, 5740-XE2, is installed, you can select the Session Manager mode option on the ISPF Settings panel so that you enter Session Manager mode when you call any of the foreground processors. Once you call Session Manager, it stays in effect for all logical screens until you turn it off. For example, if you call Session Manager and then split the screen, Session Manager will be in effect on both logical screens.

Foreground—Processing Sequence

Note: If graphics interface mode is active, Session Manager does not get control of the screen. Graphics interface mode is started when a GRINIT service has been issued, but a GRTERM service has not been issued. Refer to *ISPF Examples* for more information about these two services.

5. Press Enter. ISPF displays the data entry panel for the processor you selected. The remainder of this processing sequence applies to all foreground processors except SCRIPT/VS, VS COBOL II interactive debug, COBOL interactive debug, and Member Parts List. For these processors, use the sequence referred to in the following list:

Processor	Reference
SCRIPT/VS	"SCRIPT/VS Processor (Option 4.9)" on page 247
VS COBOL II interactive debug	"VS COBOL II Interactive Debug (Option 4.10)" on page 254
COBOL interactive debug	"OS/VS COBOL Debug (Option 4.10A)" on page 255
Member parts list	"Member Parts List (Option 4.12)" on page 259

6. Enter the appropriate ISPF library and concatenation sequence or data set name. If the input data set is partitioned, you can leave the member name blank or use a pattern to display a member list. If you need help, see:
 - the **Naming ISPF Libraries and Data Sets** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for help in entering library or data set names
 - the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for information about patterns and displaying member lists
 - "Input Data Sets" on page 237 for information about the regular concatenation sequence
 - "Object Data Sets" on page 239 for information about object modules
 - "Linkage Editor Concatenation Sequence" on page 247 for help with the linkage editor concatenation sequence

VS FORTRAN has no LIB option, which some foreground processors use to specify the input data set concatenation sequence. Therefore, the concatenation sequence specified in the **Group** fields is used to find the member to be compiled.

For FORTRAN interactive debug, the TYPE, or last qualifier, must be either OBJ or LOAD. However, if you specify an OBJ data set as your input data set, you must include a load library or data set in the input search sequence (see step 11 on page 232).

7. This step applies to FORTRAN interactive debug only. Use the **Source Type** field to tell ISPF the Type, or last qualifier, of the data set used to create the input object module or load module.
8. Use the List ID field to tell ISPF what to name the output listing. See "List Data Sets" on page 238 for more information.
9. Enter your password in the **Password** field if your input data set is password-protected. See "Password Protection" on page 239 for more information.

Foreground—Processing Sequence

10. The **Option** field, whether ASSEMBLER, COMPILER, LINKAGE EDITOR, or DEBUG, is remembered from one session to another. Therefore, you do not need to change this field unless the options you need are not displayed.
Be careful not to enter any options that ISPF generates automatically. These options are listed on the data entry panel. For more information about the options available for your processor, refer to the documentation supplied with that processor.
11. Enter any additional input libraries you need. For FORTRAN interactive debug, enter any input LOAD libraries that you need to complete the search sequence. These libraries must be LOAD libraries only. See “Input Data Sets” on page 237 if you need help.
12. Once all the input fields have been specified, press Enter to call the foreground processor.
If the Session Manager is installed and you selected Session Manager mode on the ISPF Settings panel, the foreground processor and all function keys and PA keys are under the control of the Session Manager. When foreground processing is complete, you are prompted to enter a null line to return to ISPF control.
If the Session Manager is not called, the PA and function keys have their usual TSO-defined meanings; generally, the function keys are treated the same as the Enter key.
13. Communication with foreground processors is in line-I/O mode. Whenever you see three asterisks, press Enter.
14. If the foreground processor generated an output listing, the listing is displayed automatically in Browse mode.

Note: If a Foreground processing program ends abnormally, ISPF displays a message in the upper-right corner of the screen and does not enter Browse mode. The list data set is retained, but the Foreground Print Options panel (see step 15) is not displayed.

You can scroll the output up or down using the scroll commands. All the Browse commands are available to you. When you finish browsing the listing, enter the END command.

15. An optional print utility exit routine can be installed by your system programmer. If this exit routine is installed, it may cause the Foreground option's response to differ from the following descriptions. Refer to *ISPF Planning and Customizing* for more information about the print utility exit.
Another factor that can affect the Foreground option's performance is whether or not the TSO/E Information Center Facility is installed. If the TSO/E Information Center Facility is installed, your installation can optionally allow ISPF to display a panel for submitting TSO/E Information Center Facility information with the print request. See Figure 138 on page 240 for an example of this panel and “Using the TSO/E Information Center Facility” on page 162 for information about the fields on this panel. If the TSO/E Information Center Facility is not installed, the Foreground option displays the panel shown in Figure 137 on page 233 to allow you to print, keep, or delete the output.

Figure 137. Foreground Print Options Panel (ISRFPPRT)

On this panel, the **Data set name** field shows the name of the list data set that contains the output generated by the processor you selected. In the **Option** field, enter one of the options shown at the top of the panel. The **Print mode**, **Batch SYSOUT class**, **Local Printer id or writer name**, and **Local SYSOUT Class** fields on this panel are described under “Hardcopy Utility (Option 3.6)” on page 159. The **Job statement information** field is described under the **Job Statement Information** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*.

When you press Enter, the processor entry panel is displayed again. A message indicating completion of the process is displayed in the upper-right corner of the screen.

16. You can do one of the following:
 - Enter other parameters and call the same processor.
 - Enter the END command to return to the Foreground Selection panel and select another processor.
 - Enter the RETURN command to go to the ISPF Primary Option Menu.
 - Use the jump function (=) to choose any primary option.

Expanding Packed Data

Packed data is data in which ISPF has replaced any repeating characters with a sequence showing how many times the character is repeated. Packing data allows you to use direct access storage devices (DASD) more efficiently because the stored data occupies less space than it would otherwise.

If the source data that you want to process is packed, it must be expanded before it can be successfully processed by any of the language processors. The expansion method you should use depends on whether your source data is:

- A sequential data set that contains expansion triggers

Foreground—Expanding Packed Data

An *expansion trigger* is a keyword that tells ISPF to expand additional data before copying, including, or imbedding it in the source data. Examples are INCLUDE and COPY statements, and SCRIPT .IM (imbed) control words. For information about defining your own expansion triggers, refer to *ISPF Planning and Customizing*.

ISPF does not recognize expansion triggers in data stored as a sequential data set. Therefore, for this type of data, you should follow these steps:

1. Manually expand the data that is to be copied, included, or imbedded in your source data. To do this, edit the source data, enter the PACK OFF command, and then save the data. When you have finished processing the data, you can repack it by editing it again and entering PACK ON.
 2. Select the Source Data Packed option before calling one of the language processors.
- Either of the following:
 - A sequential data set that does not contain expansion triggers
 - Any member of a partitioned data set, either with or without expansion triggers.

ISPF does recognize expansion triggers in data stored as members of a partitioned data set. Also, if your source data does not contain expansion triggers, you do not have to be concerned with them. Therefore, for these two types of data, select the Source Data Packed option before calling one of the language processors.

In each of the preceding situations, selecting the Source Data Packed option causes ISPF to expand packed source data before it is processed. For partitioned data sets, any included members are also expanded inline where the INCLUDE or COPY statements, .IM SCRIPT control words, or other user-defined trigger statements are found.

Member Expansion (ISRLEMEX)

Member expansion uses simple language scanners to find expansion triggers. If you specify that the source data is not packed, the ISRSCAN program is used. However, if you specify that the source data is packed, member expansion uses the ISRLEMEX program.

These scanners do not have all the sophistication of the actual language processors. Therefore, unusual code or code that does not compile cannot be successfully processed by member expansion. Examples are trigger statements:

- With comments that extend onto the next line
- That have compiler instructions to change the content of the code to be included.

Compiler control statements and/or symbolic substitution are not considered during member expansion. Instead, ISRLEMEX creates a temporary data set to be used as input to the language processor. All members to be processed, including members imbedded with COPY, INCLUDE, or .IM statements, are copied into this data set, expanded, and passed on to the language processor. The temporary data set will have the same block size as the input data set that contains your source data.

Foreground—Member Expansion (ISRLEMX)

When using languages that allow multiple compilations, such as VS FORTRAN, you must put the program source ending statement in your original, or top-level, program. This statement cannot be in an included member.

Table 20 shows the languages processed by member expansion, their expansion triggers, syntax, and the input columns processed for fixed-record data and variable-record data.

Table 20. Expansion Triggers and Syntax

Language	Expansion Trigger	Syntax	Input Columns Processed for F/FB Format	Input Columns Processed for V/VB Format
Assembler	COPY	COPY name	1 - 80	N/A
PL/I	%INCLUDE	%INCLUDE DDNAME(name); %INCLUDE name;	2 - 72	10 - 100
COBOL	COPY	COPY name.	7 - 72	N/A
VS FORTRAN	INCLUDE	INCLUDE (name)	1 - 72	N/A
Pascal	%INCLUDE	%INCLUDE name; %INCLUDE DDNAME(name);	1 - 72	1 - 100
SCRIPT	.IM	.IM name .IM (name) .IM ('name')	1-reclength or 9-reclength	1-reclength or 1-(reclength-8)
All languages	User-trigger	User-trigger name	N/A	N/A

Restrictions on Member Expansion and Member Parts Lists

The following restrictions apply only to the member expansion and member parts listing functions:

- The following restrictions apply to all languages:
 - Expansion triggers must follow their respective language coding conventions unless otherwise noted.
 - Multiple names and preprocessor variables on trigger statements are not permitted.
 - User triggers and their start column are specified at installation time and must be:
 - No more than 20 characters long
 - Uppercase with no imbedded blanks.

No part of the user trigger can be in a comment or continuation field.

- Macros cannot be in packed form.
- The trigger statement must be the only statement in the logical record. No continuation is allowed into or from a trigger statement. Also, the trigger keyword must be the first character on the trigger statement that is not a blank and can be followed by only one statement delimiter.
- For compilers that allow names longer than 8 characters, the name is truncated at 8.
- For compilers that allow uppercase and lowercase names, all referenced names are converted to uppercase.
- This restriction applies to assembler only:
 - The user trigger cannot start in column 1.

Foreground—Member Expansion (ISRLEMX)

- This restriction applies to FORTRAN only:
 - The member expansion function allows only the fixed form of coding.
- This restriction applies to PL/I, Pascal, and COBOL:
 - Free form coding is allowed except in trigger statements.
- The following are other COBOL restrictions:
 - The name is truncated at 8 characters or the first hyphen (-), whichever comes first.
 - The first statement in the COBOL program must be either an expansion trigger, a valid COBOL division header, a TITLE, a PROCESS, or a CBL statement. The expansion trigger can precede all other statements, but it must start in FIELD B.

If an expansion trigger is the first statement, it must eventually resolve (through multiple expansion triggers if needed) to a valid COBOL division header, TITLE, PROCESS, or CBL statement.
 - In the COPY statement, the text-name is the only value processed. The statement must end on the same line as the COPY keyword with a period followed by a space. If any option is found, the COPY statement is not expanded.
 - In the IDENTIFICATION DIVISION, the division header or paragraph header statements must be blank except for the division or paragraph name. The trigger statement must be on the next line that is neither blank nor a comment.
 - In all other divisions, the trigger statement (line) can be on any line in the division.
 - If the WITH DEBUGGING MODE clause is not found in the SOURCE COMPUTER paragraph, all debug lines are passed to the compiler without being scanned for expansion triggers, as if they were comment lines. If the clause is found, valid trigger statements found on debug lines are expanded and a D is inserted in column 7 of all the non-comment, non-continuation lines included.
 - Any character found in FIELD A that is not a blank causes the end of the paragraph form of the NOTE statement.
- The following are SCRIPT/VS restrictions:
 - The .im statement must be the only statement in the logical record and must start in the first valid column. The first logical record is tested for line numbers, as follows:
 - For fixed-length records, if the last 8 characters are all numeric, they are skipped for the complete library.
 - For variable-length records, if the first 8 characters are all numeric, processing begins with column 9.

The statements can be in either uppercase, lowercase, or mixed case.

 - Because ISPF creates a sequential data set from the imbedded members, use of the .EF control word will cause all statements in the sequential data set following the .EF to be ignored. The use of .EF is not recommended with packed data.

Member Expansion ISRLEMX Return Codes

Table 21 describes the ISRLEMX return codes.

Table 21. *ISRSCAN and ISRLEMX Return Codes*

ISRSCAN		ISRLEMX	
12	Member not found.	1 - 15	Parameter <i>n</i> was too long, where <i>n</i> = 1 to 15.
16	OPEN error on DDNAME=IN.	16	Too many parameters.
20	I/O error on DDNAME=IN.	17	Too few parameters.
24	OPEN error on DDNAME=OUT.	20	Severe error in expand module. An error message should be printed in the ISRLMSG data set.
28	I/O error on DDNAME=OUT.		

Trigger Statement Errors

Some of the more common errors that occur are:

- Restricted option
- Statement on more than one line
- Referenced member name not found.

If an error occurs, the trigger statement is not expanded and is passed to the language processor.

In SCRIPT/VS, if the error was found in a user trigger, one blank line is inserted before and after the statement in question.

Input Data Sets

Input to a foreground processor is one of the following:

- A member of an ISPF library or other partitioned data set. If you do not specify a member name, ISPF displays a member list.
- A sequential data set.

If an ISPF library is the input source, the member can be in any library in the concatenation sequence. You can include additional input by using:

- The COPY statement for assembler and COBOL
- The INCLUDE statement for PL/I, FORTRAN, and Pascal
- The SCRIPT/VS imbed control word (.im)
- Macros
- Additional input libraries.

Whenever the input source is partitioned, you can specify additional input libraries. They must be partitioned data sets that are not password protected. You cannot specify additional input libraries if the input source is sequential. Specify the fully qualified data set names, enclosed in apostrophes, such as:

```
Additional input libraries:
====> 'ABC.MACROS'
```

For example, in Figure 139 on page 241, a concatenation sequence of three ISPF data sets and one additional input library has been specified. The concatenation order is:

Foreground—Input Data Sets

```
ISPFDEMO.XXX.ASM  
ISPFDEMO.A.ASM  
ISPFDEMO.MASTER.ASM  
ISPFTEST.FLAG.ASM
```

The last data set in the concatenation sequence, ISPFTEST.FLAG.ASM, is entered as an additional input library at the bottom of the panel. Additional input libraries are always last in the sequence.

Before calling a foreground processor, ISPF scans the concatenated sequence of libraries to find the member to be processed. For this example, the member name is TOP. If member TOP first appears in data set ISPFDEMO.A.ASM, the following prompter command would be generated by Assembler XF.

```
ASM  'ISPFDEMO.A.ASM(TOP)'  
     LIB('SYS1.MACLIB',  
         'ISPFDEMO.XXX.ASM',  
         'ISPFDEMO.A.ASM',  
         'ISPFDEMO.MASTER.ASM',  
         'ISPFTEST.FLAG.ASM')  
     LOAD('ISPFDEMO.XXX.OBJ(TOP)')  
     PRINT(LISTASM)  
     LIST,TEST,TERM,RENT
```

The processor options are passed to the prompter exactly as you specify them.

Note: The macro library SYS1.MACLIB is included in the concatenation sequence for Assembler only. When included, as the preceding prompter command example shows, it is always first in the sequence because of its large block size.

List Data Sets

In the List ID field, you can enter the name you want ISPF to use to identify the list data set that will contain the foreground processor output. This name is passed to the foreground processor by either the LIST or PRINT option. The following rules apply:

- If the input data set is partitioned the List ID field is optional:
 - Leave the List ID field blank if you want ISPF to use the input member name to identify the output list data set.
 - Enter a LIST ID if you want to use a name other than the input member name to identify the output list data set.
- If the input data set is sequential, you must enter a LIST ID.

For best results, if you plan to debug your program later using COBOL interactive debug:

- Enter the name of the member being compiled in the **List ID** field if the input data set is partitioned.
- If the input data set is sequential, enter the name of the sequential data set.

Then, when you debug your program, use these same names in the **PROG ID** fields on the COBOL Interactive Debug panel.

ISPF names the listing:

```
prefix.userid.listid.LIST
```

where

prefix

is the data set prefix in your TSO profile, if you have one and if it is different from your user ID,

userid

is your user ID, and

listid

is the member name or the value in the **List ID** field.

If you are using the same list data set for multiple job steps, be aware that the DCB information can differ between the language processors and the linkage editor, causing an I/O error when trying to read the list data set. We suggest that you use a different list ID for each job step.

Password Protection

Input, object, interpretable text (ITEXT), and symbolic debug data sets can be password-protected. You can specify the password in the **Password** field on the foreground processor data entry panel. The password does not appear on the screen when you enter it, but ISPF remembers it.

Since foreground processor panels have only one **Password** field, ISPF prompts you if all data sets do not have the same password.

Object Data Sets

The following information about object data sets applies to all foreground assemblers and compilers. However, if you are using the VS FORTRAN compiler, you must enter OBJECT in the **Other** field to generate an output object module. The two assemblers and the other compilers generate object modules automatically.

If you specify an ISPF library as the input source, ISPF writes object output from the foreground assembler or compiler to a partitioned data set. This data set has the same name as the first library in the concatenation sequence, but has a type of OBJ. For example, if you specify PROJECT.LIB1.ASM as the first library name, the object output is placed in data set PROJECT.LIB1.OBJ. The member name of the object module is the same as the input member.

If you specify another data set, the object output is placed in a data set of the same name, but with the last qualifier replaced by OBJ. If the data set name has only one qualifier, OBJ is appended as the last qualifier. For example, if you specify an input data set named OTHER.ASM or OTHER, the object output is placed in a data set named OTHER.OBJ. For partitioned data sets, the object output is stored in a member with the same name as the input member. For sequential data sets, the object output is stored in a sequential data set.

Note: The object data set must exist before invoking a foreground or batch option that creates an object module.

Foreground—TSO/E Information Center Facility

If the TSO/E Information Center Facility is installed, your installation can optionally allow ISPF to substitute the panel shown in Figure 138 for the panel shown in Figure 137 on page 233. This panel is valid for all foreground processors except SCRIPT/VS and member parts list. See “Using the TSO/E Information Center Facility” on page 162 for information about the fields on this panel.

The screenshot shows a terminal window titled "Foreground Print Options". The window has a title bar with a menu icon on the left and window control icons (minimize, maximize, close) on the right. The main content area contains the following text:

```

                                Foreground Print Options

PK - Print data set and keep          K - Keep data set (without printing)
PD - Print data set and delete        D - Delete data set (without printing)

If END command is entered, data set is kept without printing.

Data set name:
Printer Location. . . _____
Printer Format. . . . _____
Number of copies. . . ____

Option ==> _____
F1=Help   F2=Split  F3=Exit  F9=Swap  F12=Cancel

```

The bottom of the panel is a solid gray bar.

Figure 138. Foreground Print Options Panel With TSO/E Information Center Facility (ISRFPRI)

Assembler (Option 4.1)

Foreground Assembler enables you to use either High Level Assembler or Assembler H. Both are called from the Foreground Assembler panel, shown in Figure 139 on page 241. For information about Assembler data sets, see the appendix called **Allocation Data Sets** in the *ISPF User's Guide Volume I*.

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu RefList Utilities Help

Foreground Assembler

More: +

ISPF Library:

Project . . . PDFTDEV

Group ROMAR

Type ASM

Member (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:

Data Set Name

List ID Assembler

Password 1 1. High Level Assembler 2. Assembler H

Assembler Options: (Options OBJECT and LIST generated automatically)

====>

Additional input libraries:

====>

Command ====>

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F10=Actions F12=Cancel

07/024

Figure 139. Foreground Assembler Panel (ISRF01)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input Libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Assembler Options

Be careful not to enter the OBJECT and LIST options in this field. ISPF generates these options automatically. OBJECT writes the output object module to a partitioned data set. LIST writes the output listing to a list data set. See "Object Data Sets" on page 239 and "List Data Sets" on page 238 for more information.

Assembler

Enables you to specify whether to use the High Level Assembler or Assembler H. Specify a **1** for High Level Assembler or a **2** for Assembler H.

COBOL (Option 4.2)

ISPF generates an ISPEXEC SELECT PGM(IGYCRCTL) statement to invoke a COBOL compiler using the values you enter on the Foreground COBOL Compile panel, shown in Figure 140 on page 242. For information about COBOL allocation data sets, see the appendix called **Allocation Data Sets** in the *ISPF User's Guide Volume I*.

Foreground—COBOL (Option 4.2)

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu RefList Utilities Help

Foreground COBOL Compile

More: +

ISPF Library:

Project . . . PDFTDEV

Group . . . ROMAR

Type . . . COBOL

Member . . . (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:

Data Set Name . . .

List ID Password . .

Compiler Options: (Options LIB and OBJECT generated automatically)

Test . . . NOTEST (TEST or NOTEST)

Other . . .

Additional input libraries:

====>

Command ====>

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F10=Actions F12=Cancel

08/024

Figure 140. Foreground COBOL Compile Panel (ISRFP02)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Test If you plan to run interactive debug after you compile your program, enter TEST in the **Test** field. Otherwise, enter NOTEST.

Other If you plan to run VS COBOL II interactive debug after you compile your program, enter RESIDENT in the **Other** field. Otherwise, just enter any other options you need.

Be careful not to enter the LIB and OBJECT options in the **Other** field. ISPF generates these options automatically. LIB specifies the input data set concatenation sequence. OBJECT writes the output object module to a partitioned data set. See "Input Data Sets" on page 237 and "Object Data Sets" on page 239 for more information.

VS FORTRAN Compile (Option 4.3)

VS FORTRAN Compile (Option 4.3)

The Foreground VS FORTRAN Compile panel is shown in Figure 141 on page 243.

Foreground—VS FORTRAN Compile (Option 4.3)

```
Menu  RefList  Utilities  Help
-----
                                Foreground VS FORTRAN Compile
                                More:      +

ISPF Library:
Project . . . ISPFDEMO
Group   . . . XXX      . . . _____ . . . _____
Type    . . . FORT
Member  . . . TOP      (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . . _____

List ID . . . _____ Password . .

Compiler options:
Object   . . _____ (OBJECT or NOOBJECT)
Other    . . . SOURCE, TEST

Additional input libraries:
====> _____
Command ====> _____
F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel
```

Figure 141. Foreground VS FORTRAN Compile Panel (ISRFP03)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Object

ISPF does not automatically generate any options for VS FORTRAN. Instead of generating an object module automatically, the VS FORTRAN compiler allows you to decide whether to generate one. To generate an object module, enter OBJECT in the **Object** field. To avoid generating an object module, enter NOOBJECT. See "Object Data Sets" on page 239 for more information.

Other If you plan to run FORTRAN interactive debug after you compile your program, enter TEST in the **Other** field, along with any other options you need.

PL/I (Option 4.5)

The Foreground PL/I option enables you to invoke either OS PL/I Version 2 or PL/I for MVS and VM, using the values specified on the Foreground PL/I Compile panel shown in Figure 142 on page 244.

Foreground—PL/I Compile (Option 4.5)

The screenshot shows a terminal window titled "Session A - [24x80]". The menu bar includes File, Edit, Transfer, Appearance, Communication, Assist, Window, and Help. Below the menu bar, the title "Foreground PL/I Compile" is centered, with a "More: +" button to the right. The main area contains the following fields and options:

- ISPF Library
 - Project . . . PDFDEV
 - Group . . . BUTCH
 - Type . . .
 - Member . . . (Blank or pattern for member selection list)
- Other Partitioned or Sequential Data Set:
 - Data Set Name . . .
- List ID . . . Compiler
- Password . . . 1. OS PL/I VERSION 2 2. PLI for MVS and VM
- Compiler options: (Options LIB, OBJECT, and PRINT generated automatically)
- Additional input libraries:
 - ===>
 - ===>
 - ===>
- Command ===>

At the bottom, a row of function keys is displayed: F1=HELP, F2=SPLIT, F3=END, F4=RETURN, F5=RFIND, F6=RCHANGE, F7=UP, F8=DOWN, F9=SWAP, F10=LEFT, F11=RIGHT, F12=RETRIEVE. The bottom right corner shows the page number 22/015.

Figure 142. Foreground PL/I Optimizing Compile Panel (ISRF05)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Compiler

Choose the compiler you want to use from the list presented.

Compiler Options

Enter any options you need in the **Other** field, except LIB, OBJECT, or PRINT. ISPF generates these options automatically. LIB specifies the input data set concatenation sequence. OBJECT writes the output object module to a partitioned data set. PRINT writes the output listing to a list data set. See "Input Data Sets" on page 237, "Object Data Sets" on page 239, and "List Data Sets" on page 238 for more information.

VS Pascal Compile (Option 4.6)

The Foreground VS Pascal Compile panel is shown in Figure 143 on page 245.

Foreground—VS Pascal Compile (Option 4.6)

```
Menu  RefList  Utilities  Help
-----
                          Foreground VS PASCAL Compile
                          More:      +

ISPF Library:
Project . . . ISPFDemo
Group . . . XXX
Type . . . PASCAL
Member . . . TOP (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . .

List ID . . . Password . .

Compiler options: (Options LIB, OBJECT, and PRINT generated automatically)
===>

Additional input libraries:
===>
===>
Command ===>
F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel
```

Figure 143. Foreground VS Pascal Compile Panel (ISRFP06)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Other Enter any options you need in the **Other** field, except LIB, OBJECT, or PRINT. ISPF generates these options automatically. LIB specifies the input data set concatenation sequence. OBJECT writes the output object module to a partitioned data set. PRINT writes the output listing to a list data set. See "Input Data Sets" on page 237, "Object Data Sets" on page 239, and "List Data Sets" on page 238 for more information.

Binder/Linkage Editor (Option 4.7)

The Foreground Binder/Linkage Editor is called from the Foreground Binder/Linkage Edit panel, shown in Figure 144 on page 246.

Foreground—Binder/Linkage Editor (Option 4.7)

```
Menu RefList Utilities Help
-----
Foreground Binder/Linkage Editor
More:

ISPF Library:
Project . . . TOOLS
Group . . . COMMON . . . . .
Type . . . LEL
Member . . . (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . .

List ID . . . Password . .

Linkage editor/binder options: (Options LOAD, LIB, and PRINT generated
automatically)
Binder . . BINDER (BINDER or NOBINDER)
Other . . . LET,LIST,MAP

Additional input libraries:
Command ==>
F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Sw
F10=Actions F12=Cancel
```

Figure 144. Foreground Binder/Linkage Editor Panel (ISRFP07B)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Linkage editor/binder options

Enter any options you need, except LOAD, LIB, or PRINT. ISPF generates these options automatically. LOAD writes the output object module to a partitioned data set.

Note: Sequential data sets are invalid when using the Linkage Editor.

LIB specifies the input data set concatenation sequence. PRINT writes the output listing to a list data set. See "List Data Sets" on page 238 and "Object Data Sets" on page 239 for more information.

Binder

Determines whether the Linkage Editor (NOBINDER) or Binder (BINDER) is invoked.

Note: The binder is available only if DFSMS 1.1, or later, is installed.

SYSLIB

The name of the data set that is to contain the ISPF library concatenation sequence used to resolve any copy statements specified in your program. See "Input Data Sets" on page 237 and the **SYSLIB Data Set** section of the appendix called **Allocation Data Sets** in the *ISPF User's Guide Volume I* for more information.

SYSLIN

The name of the data set that is to contain the object module. The **SYSLIN** field is provided to accommodate the VS Pascal XA and NOXA processing options. See "Input Data Sets" on page 237 and **SYSLIN Data Set** section of the appendix called **Allocation Data Sets** in the *ISPF User's Guide Volume I* for more information.

Linkage Editor Concatenation Sequence

The concatenation sequence used by ISPF to find the member for input to the Linkage Editor is:

```
project-name.lib1-name.type
project-name.lib2-name.type
(and so forth)
```

where type is whatever you specify on the panel. For example, it can be OBJ or some other type containing Linkage Editor language (LEL) control statements. If the type is not OBJ, an OBJECT DDNAME is automatically allocated to ease the use of the following Linkage Editor control statements:

```
INCLUDE OBJECT(member-name)
```

For example:

```
Project . . . XYZ
Group . . . MYLIB . . . MASTER . . .
Type . . . LEL
Member . . . TOP
```

In this example, ISPF searches data sets XYZ.MYLIB.LEL and XYZ.MASTER.LEL to find member TOP, which should contain LEL control statements. Also, ISPF allocates to DDNAME OBJECT (DISP=SHR) the following concatenated sequence of object libraries:

```
XYZ.MYLIB.OBJ
XYZ.MASTER.OBJ
```

This concatenated sequence is searched by the Linkage Editor if member TOP contains INCLUDE OBJECT(member-name) statements. The concatenation sequence passed to the Linkage Editor by way of the LIB parameter has a type qualifier of LOAD and includes the system libraries you specify, as follows:

```
LIB('project-name.lib1-name.LOAD',
    'project-name.lib2-name.LOAD',
    .
    .
    .
    and so forth,
    .
    .
    .
    'syslib1-name',
    .
    .
    .
    and so forth)
```

This concatenation sequence is used by the Linkage Editor to resolve automatic call references.

SCRIPT/VS Processor (Option 4.9)

Use of this facility requires the installation of the Document Composition Facility (DCF) program product and its component text processing program, SCRIPT/VS, with the Foreground Environment Feature.

Note: DCF requires the TSO profile prefix to be set. For additional information, refer to DCF documentation.

Foreground—SCRIPT/VS Processor (Option 4.9)

When you select the SCRIPT/VS option, the first panel displayed is the SCRIPT/VS Processor panel shown in Figure 145.

```
Menu  RefList  Utilities  Help
-----
                        SCRIPT/VS Processor
                        More:  +

Style . . . . .
                        Enter "/" to select option
                        -  Display Style Options
                        /  Browse Output

ISPF Library:
Project . . . ISPFDEMO
Group . . . . XXX
Type . . . . TEXT
Member . . . TOP (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . .

List ID . . . Password . .

Additional input libraries:
===>
===>
Command ===>
F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel
```

Figure 145. SCRIPT/VS Processor Panel (ISRFP09)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, and **Style**, Display Style Options, and Browse Output option, which are explained in the following sections.

SCRIPT/VS Processing Sequence

A *style* contains options that tell SCRIPT/VS how to format a document for display or printing. These options include the use of fonts, white space, line lengths, and so forth.

The value you put in the **Style** field and whether or not you select the Display Style Options and Browse Output options determine the following SCRIPT/VS processing sequence:

1. For the **Style** field, you can do one of the following:

- Enter the name of an existing style.

You can enter the name of a style you have created or one of the styles SCRIPT/VS creates for you: DRAFT and FINAL. These two styles correspond to the formatting options available in the previous release of SCRIPT/VS Foreground Processing. If you have not defined these options before or if this is your first release of ISPF, the default values for the SCRIPT/VS formatting options are set for you.

If you enter the name of an existing style in the **Style** field, that style is used for formatting.

- Enter the name of a new style you want to define.

If you enter a new style name, the name is added to your style list. The new style uses SCRIPT/VS formatting options that are equal to the formatting options of the last style. Step 2 on page 249 explains what to do to change these options.

Foreground—SCRIPT/VS Processor (Option 4.9)

- Leave the **Style** field blank.
If you leave the **Style** field blank, ISPF displays the Select SCRIPT/VS Formatting Style panel. This panel displays a list of the available styles. See “Selecting a Formatting Style” on page 251 for more information.
 - 2. Use a slash to select Display Style Options. ISPF displays the SCRIPT/VS Options for Style panel, which shows the options that are currently being used and allows you to change them. See “Changing Style Options” on page 252 for more information.
If you do not select Display Style Options, ISPF does not display the SCRIPT/VS Options for Style panel.
 - 3. Enter the appropriate ISPF library and concatenation sequence or data set names. You can display a member list by omitting the member name or by using a pattern. See the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* if you need help entering library or data set names, “Input Data Sets” on page 237 for more information about the concatenation sequence, and the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about displaying member lists.
 - 4. Enter your password in the **Password** field if your input data set is password-protected. See “Password Protection” on page 239 for more information.
 - 5. Use the List ID field to tell ISPF what to name the output SCRIPT/VS listing. See “List Data Sets” on page 238 for more information.
 - 6. Use a slash to select the Browse Output option. ISPF displays your output in Browse mode after it has formatted.
If you do not select the Browse Output option, ISPF skips Browse mode and displays a Foreground Print Options for Style panel, shown in Figure 146 on page 250.
 - 7. Once all the input parameters have been specified, press Enter to call SCRIPT/VS.
 - 8. Communication with SCRIPT/VS is in line-I/O mode. Each time you see three asterisks, press Enter. These asterisks, which usually appear at the bottom of the screen, show that TSO is waiting for you to clear the screen before it can proceed.
If the Session Manager is installed and you selected the Session Manager mode option on the ISPF Settings panel, SCRIPT/VS and all PF and PA keys are under control of the Session Manager. When formatting is complete, you are prompted to enter a null line to return to ISPF control.
If the Session Manager is not called, the PA and function keys have their usual TSO-defined meanings; generally, the function keys are treated the same as Enter.
 - 9. One or both of the following panels may appear, depending on your treatment of the **Style** and Display Style Options fields. If both appear, they will be in the following sequence:
 - a. Select SCRIPT/VS Formatting Style
 - b. SCRIPT/VS Options for Style
- See “Selecting a Formatting Style” on page 251 and “Changing Style Options” on page 252 if you need information about using these panels. When you are finished with each panel, press Enter.

Foreground—SCRIPT/VS Processor (Option 4.9)

10. If SCRIPT/VS generated an output listing and you selected the Browse Output option, the output is displayed automatically in Browse mode. Otherwise, continue with the next step.

Note: If SCRIPT/VS formatting ends abnormally, ISPF displays a message in the upper-right corner of the screen and does not enter Browse mode. The list data set is retained, but the Foreground Print Options for Style panel (see step 11) is not displayed.

You can scroll the output up or down using the scroll commands. All the Browse commands are available to you. When you finish browsing the listing, enter the END command.

11. An optional print utility exit can be installed by your system programmer. If this exit is installed, it may cause SCRIPT/VS's response to differ from the following descriptions. Refer to *ISPF Planning and Customizing* for more information about the print utility exit.

Another factor that can affect SCRIPT/VS's performance is whether the TSO/E Information Center Facility is installed. If the TSO/E Information Center Facility is installed, your installation can optionally allow ISPF to display a panel for submitting the TSO/E Information Center Facility information with the print request. See Figure 149 on page 254 for an example of this panel and "Using the TSO/E Information Center Facility" on page 162 for information about the fields on this panel.

If the TSO/E Information Center Facility is not installed, SCRIPT/VS displays the panel shown in Figure 146.

The Foreground Print Options for Style panel allows you to optionally print the formatted document and specify its disposition. On this panel, the **Data Set Name** field shows the name of the list data set that contains the SCRIPT/VS output. On the Command line, enter one of the options shown at the top of the panel.

The screenshot shows a terminal window titled "Session A - [24x80]" with a menu bar (File, Edit, Transfer, Appearance, Communication, Assist, Window, Help). The main panel is titled "Foreground Print Options for Style: DRAFT". It contains the following text:

```
PK Print data set and keep          K Keep data set (without printing)
PD Print data set and delete        D Delete data set (without printing)

If END command is entered, data set is kept without printing.

Data set name . . : P020136.BUBBA.LIST

Print mode . . . BATCH              (Batch or Local)

Batch SYSOUT class . . _____
Local Printer ID or
writer-name. . . _____ (For local printer)
Local SYSOUT class . . _____

Job statement information:          (Required for system printer)
====> _____
====> _____
====> _____
====> _____

Option ====> D
F1=Help  F2=Split  F3=Exit  F9=Swap  F12=Cancel
```

The bottom right corner of the panel displays "23/015".

Figure 146. Foreground Print Options for Style Panel (ISRFP09P)

Foreground—SCRIPT/VS Processor (Option 4.9)

In the **Print mode** field, enter either of the following commands:

- **BATCH** to submit your print request as a background job.

If you choose **BATCH**, specify a valid Batch **SYSOUT CLASS** and job statement information. Specifying **BATCH** causes **SCRIPT/VS** to ignore the **Local Printer ID or Writer Name** field, and the **Local SYSOUT Class** field.

SCRIPT/VS list data sets are formatted **DCB=RECFM=VBM**. Unless the line count is altered, the formatted page length may exceed the **JES** line count and cause duplicate page ejects. Therefore, specify the following job statement information to prevent **JES** line counting:

```
/*JOBPARM LINECT=0
```

- **LOCAL** to print the output on a local printer.

If you choose **LOCAL**, specify the **Local Printer ID or writer name** of a local printer and optional **Local SYSOUT Class**. Specifying **LOCAL** causes **SCRIPT/VS** to ignore the **Batch SYSOUT class** field. Job statement information is ignored.

Page spacing will probably vary from the expected format because of differences between 328x printers and 1403 or 3800 printers used as a formatting guide.

See “Hardcopy Utility (Option 3.6)” on page 159 if you need information about the **Print mode**, **Batch SYSOUT class**, **Local Printer ID or Writer Name**, and **Local SYSOUT Class** fields. See the **Job Statement Information** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for information about the **Job statement information** fields.

When you press Enter, the **SCRIPT/VS Processor** panel is displayed again. A message indicating completion of the process is displayed in the upper-right corner of the screen.

12. You can do one of the following:

- Enter other parameters and call **SCRIPT/VS** again.
- Enter the **END** command to return to the **Foreground Selection** panel and select another processor.
- Enter the **RETURN** command to go to the **ISPF Primary Option Menu**.
- Use the jump function (=) to choose any primary option.

Selecting a Formatting Style

Use the **Select SCRIPT/VS Formatting Style** panel shown in Figure 147 on page 252 to see which styles are available and to select or delete styles as necessary.

Foreground—SCRIPT/VS Processor (Option 4.9)

Select SCRIPT/VS Formatting Style Row 1 to 2 of 2

Valid Line Commands: S - Use this STYLE for formatting
D - Delete

Line Cmd	Style	Description
'	DRAFT	Draft SCRIPT/VS document options
'	FINAL	Final SCRIPT/VS document options
***** Bottom of data *****		

Command ==> _____ Scroll ==> _____

F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Figure 147. Select SCRIPT/VS Formatting Style Panel (ISRFP09T)

The Select SCRIPT/VS Formatting Style panel is a list that can be scrolled and contains all the styles available to you. Each style is a set of predefined formatting options.

Type either S or D in the **Line Cmd** field and press Enter to select or delete a style, respectively. You can only select one style at a time for formatting. However, one or more styles can be deleted at the same time.

The display fields on the Select SCRIPT/VS Formatting Style panel contain the following information:

Style The names of styles that you can either select or delete.

Description

A reminder of the purpose of each style. Type over the description to change it.

Changing Style Options

Use the SCRIPT/VS Options for Style panel to:

- See which options are currently being used for the style you chose
- Change the options as needed.

Figure 148 on page 253 shows the options available for the DRAFT style.

```

SCRIPT/VS Options for Style: DRAFT

Profile data set. . .
FONTLIB data set. . .
SEGLIB data set. . .
User macro data set . . .
System macro data set . . .

Bind:      Odd . . .
          Even. . .

Device type . . . . .
Chars (Fonts) . . . . .
SYSVAR . . . . .
Page . . . . .

Other script parms . . .

Enter Yes or No for the following:
Twopass . . . . . NO          Uppercase only. . . . . YES
Spelling . . . . . YES       Unformat. . . . . NO
Index . . . . . NO          Condensed Text. . . . . NO
Command ==>
F1=Help   F2=Split  F3=Exit  F9=Swap  F12=Cancel
  
```

Figure 148. SCRIPT/VS Options for Style: DRAFT Panel (ISRFP090)

The fields on the SCRIPT/VS Options for Style panel represent SCRIPT/VS formatting options, all of which are optional. For a complete description of these options, refer to *Document Composition Facility: Generalized Markup Language Starter Set User's Guide*

If you enter the END command from the SCRIPT/VS Options for Style panel, changes on this panel are not saved. If the style is new, it is saved with default formatting options.

If you press Enter from the SCRIPT/VS Options for Style panel, SCRIPT/VS processes the data set, and then one of the following occurs:

- A Browse panel is displayed if you selected the Browse Output option on the SCRIPT/VS Processor panel. When you finish browsing the SCRIPT/VS formatted output, a Foreground Print Options for Style panel is displayed.

Note: If you enter the PRINT parameter in the **Other script parms** field, the Browse panel is not displayed.

- A Foreground Print Options for Style panel is displayed if you did not select the Browse Output option on the Script/VS Processor panel.

See step 11 on page 250 for more information about printing SCRIPT/VS output.

Using SCRIPT/VS with the TSO/E Information Center Facility

If the TSO/E Information Center Facility is installed, your installation can optionally allow ISPF to substitute the panel shown in Figure 149 on page 254 for the panel shown in Figure 146 on page 250. See "Using the TSO/E Information Center Facility" on page 162 for information about the fields on this panel.

Foreground—VS COBOL II Interactive Debug (Option 4.10)

The screenshot shows a window titled "Foreground Print Options for Style:". Inside the window, the following text is displayed:

PK - Print data set and keep K - Keep data set (without printing)
PD - Print data set and delete D - Delete data set (without printing)

If END command is entered, data set is kept without printing.

Data Set Name . . :

Printer location. . . _____

Printer Format. . . . _____

Number of copies. . . ____

Command ==> _____

F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Figure 149. Foreground Print Options for Style Panel with the TSO/E Information Center Facility (ISRFP09I)

VS COBOL II Interactive Debug (Option 4.10)

To run VS COBOL II interactive debug in foreground, the VS COBOL II compiler, Release 2, must be both installed and accessible, for the following reasons:

- You must compile your program by using the VS COBOL II compiler (option 4.2 or option 5.2) with the TEST and RESIDENT options before running VS COBOL II interactive debug. Debug output from the compilation is stored in the object module, which ISPF generates automatically.
- The VS COBOL II compiler contains the Debug Productivity Aid (DPA) facility, which ISPF accesses when you run VS COBOL II interactive debug in the foreground. The panel shown in Figure 150 on page 255 is displayed if ISPF cannot access DPA.

Foreground—VS COBOL II Interactive Debug (Option 4.10)

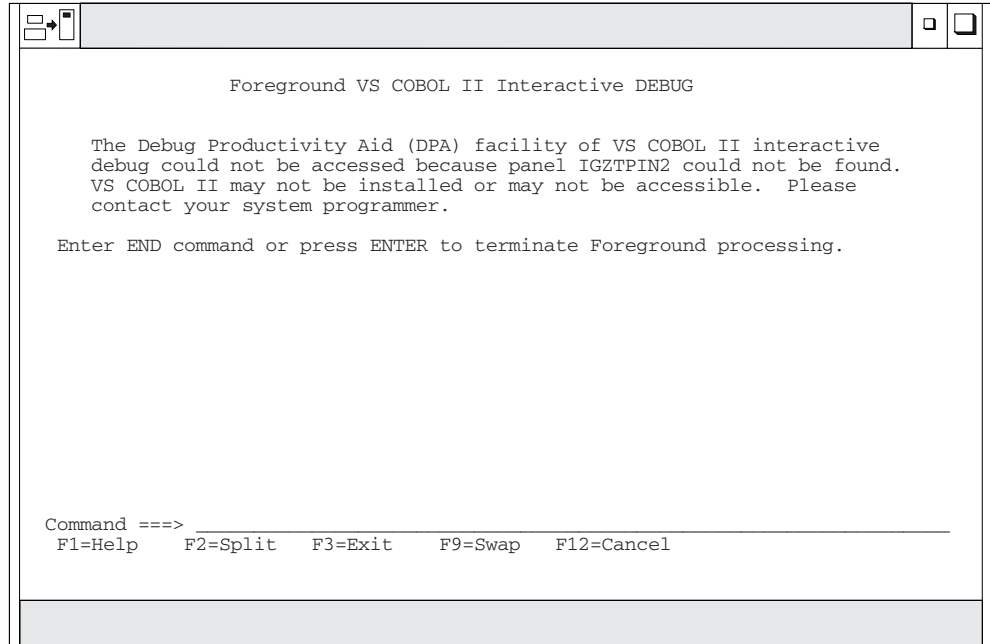


Figure 150. Foreground VS COBOL II Interactive Debug Panel (ISRFP10)

All VS COBOL II interactive debug processing in the foreground is under DPA's control. DPA displays a series of interactive panels. When processing is complete, return to step 12 on page 232.

OS/VS COBOL Debug (Option 4.10A)

Before you can run COBOL interactive debug, you must first do the following, in the order shown:

1. Allocate a symbolic debug data set and, optionally, a print output data set by using the Data Set utility (option 3.2). See "Symbolic Debug Data Sets" on page 257 and "Print Output Data Sets" on page 257 for more information.
2. Compile the program by using the OS/VS COBOL compiler (option 4.2A or option 5.2A) with the TEST option.
3. Use the linkage editor (option 4.7 or option 5.7) to generate an output load module, which COBOL interactive debug will use as input.

The COBOL Debug panel is shown in Figure 151 on page 256.

Foreground—OS/VS COBOL Debug (Option 4.10A)

" to select option' with a '/' key for 'Source'."/>

```
Menu  RefList  Utilities  Help
-----
                                COBOL Interactive Debug
                                More:  +

ISPF Library:
Project . . . ISPFDemo
Group . . . XXX      (Type = LOAD assumed)
Member . . . TOP_____ (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . . _____

Prog ID . . . _____ . . . _____ . . . _____
Print ID . . _____ Password . .

Enter "/" to select option
/ Source

Execution Parms:
====> _____
Command =====> _____
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel
```

Figure 151. COBOL Debug Panel (ISRFP10A)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except **Prog ID**, **Print ID**, **Source**, and **Execution Parms**, which are explained in the following sections.

COBOL Debug Processing Sequence

Fill in the fields on the COBOL Debug panel as follows:

1. Enter the ISPF library or data set name that contains the input load module generated by the linkage editor. You can display a member list by omitting the member name or by using a pattern. See the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* if you need help entering library or data set names, "Object Data Sets" on page 239 for more information about object modules, and the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about displaying member lists.
2. The **Prog ID** field tells ISPF the names of the sequential list data sets generated by the OS/VS COBOL compiler. You can enter up to four Prog ID names if you compiled a partitioned data set member or a sequential data set for each name. See "List Data Sets" on page 238 for more information.
3. The **Print ID** field is optional. This field tells ISPF the name of a sequential data set to which it writes the print output from the debug session. This data set must be pre-allocated. See "Print Output Data Sets" on page 257 for more information.
4. Enter your password in the **Password** field if your input data set is password-protected. See "Password Protection" on page 239 for more information.
5. The **Source** option tells ISPF whether or not to allocate the list data sets specified in the **Prog ID** field. If you select Source, these data sets must already exist.

6. The **ExecutionParms** field is remembered from one session to another. Therefore, you do not need to change this field unless the parameters you need are not displayed. Enter any parameters that you want ISPF to pass to the program being debugged.
7. To continue COBOL interactive debug, return to step 12 on page 232.

Symbolic Debug Data Sets

If you want to run COBOL interactive debug on a program compiled with the OS/VS COBOL compiler, you must use the Data Set utility (option 3.2) to allocate a symbolic debug data set before compiling the program. Then, when you compile the program, enter TEST in the **Test** field on the Foreground OS/VS COBOL Compile panel. The TEST parameter generates the debug output, which ISPF stores in the symbolic debug data set you allocated.

Note: You do not need to allocate a symbolic debug data set for programs compiled with VS COBOL II because the debug output, if requested, is stored in the OBJECT module, which ISPF generates automatically.

When you allocate the data set, specify the same name as the data set that contains your COBOL program, but:

- For an ISPF library, enter:
 - The Group name you will specify in the first **Group** field on the Foreground OS/VS COBOL Compile panel
 - SYM in the **Type** field.
- For another partitioned or sequential data set, use SYM to replace the last qualifier. For example, if COBOL.INPUT or COBOL is the input data set name, allocate COBOL.SYM as the symbolic debug data set.

Use the following values to allocate symbolic debug data sets:

```
Record format . . . . . F
Record length . . . . . 512
Block size . . . . . 512
```

For partitioned data sets, including ISPF libraries, the debug output is stored in a member with the same name as the input member. For sequential data sets, the debug output is stored in a sequential data set.

When you run COBOL interactive debug, the names you put in the **Prog ID** field on the COBOL Interactive Debug panel must be the same as the input member names if you are to create a correct SYM data set.

Print Output Data Sets

ISPF writes the print output from a debug session to a sequential data set, if you:

- Allocate the data set, using the Data Set utility (option 3.2), before you run COBOL interactive debug
- Enter, in the **Print ID** field on the COBOL Interactive Debug panel, the name of the data set you allocated.

You can avoid generating the print output by leaving the **Print ID** field blank, even if you allocated the data set.

Foreground—OS/VS COBOL Debug (Option 4.10A)

The last qualifier in the name of the data set you allocate must be TESTLIST. For example, if you allocate a sequential data set named DEBUG1.TESTLIST and then specify the Print ID as:

```
Print ID . . DEBUG1
```

ISPF writes the print output to a sequential data set named:

```
'prefix.userid.DEBUG1.TESTLIST'
```

where *prefix* is your TSO data set prefix, if you have one and if it is different from your user ID, and *userid* is your TSO user ID. Use the following values to allocate print output data sets:

```
Record format . . . . . FBA
Record length . . . . . 121
Block size . . . . . 3146
```

The value you put in the **Block Size** field should be a multiple of 121, the record length. Therefore, if your print output data is too large to fit within the recommended block size (3146), increase this amount by using a multiple of 121, such as 3267 or 3388.

FORTRAN Debug (Option 4.11)

Before you can run FORTRAN interactive debug, you must first compile the program using the VS FORTRAN compiler (option 4.3 or option 5.3) with the OBJECT and TEST options.

The FORTRAN interactive debug option supports both FORTRAN Interactive Debug Version 2 (5668-903) and FORTRAN Interactive Debug Version 1 (5734-F05). ISPF looks for Version 2 first, then Version 1, and finally its own Debug Dialog, which displays the panel shown in Figure 152.

```
Menu RefList Utilities Help
-----
FORTRAN Interactive Debug
More:      +

ISPF Library:
Project . . . ISPFDEMO
Group . . . . XXX
Type . . . . LOAD (OBJ or LOAD)
Member . . . TOP (Blank or pattern for member selection list)

Source Type . . FORT

Other Partitioned or Sequential Data Set:
Data Set Name . . .

List ID . . . Password . .

Debug Options: (Options LIB, SOURCE, and PRINT generated automatically)
===>

Additional input libraries:
Command ===>
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel
```

Figure 152. FORTRAN Debug Panel (ISRFP11)

Foreground—FORTRAN Debug (Option 4.11)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Debug Options

Enter any options you need, except LIB, SOURCE, or PRINT. ISPF generates these options automatically. LIB specifies the input data set concatenation sequence. SOURCE specifies the input source program, whose type is identified in the **Source Type** field. PRINT writes the output listing to a list data set. See "Input Data Sets" on page 237 and "List Data Sets" on page 238 for more information.

Member Parts List (Option 4.12)

The member parts list utilizes the program ISRLEMX to show the following information for each source program module specified:

- The names of the modules it calls or includes
- The names of the modules that call or include it.

The languages permitted in the member expansion function also are permitted in the member parts list function, and the expansion triggers have the same restrictions. See "Member Expansion (ISRLEMX)" on page 234. Besides the expansion triggers, the member parts list also uses the CALL statements in assembler, PL/I, COBOL, and VS FORTRAN. The format of the CALL statement is:

CALL name

where the delimiter after the name can be either a left parenthesis, a blank, or a valid statement delimiter. In COBOL, the CALL statement is valid only in the PROCEDURE DIVISION, and the CALL PGMA and CALL 'PGMA' statements both result in a reference to the member name PGMA.

When you select the Foreground Member parts list option (4.12), the panel shown in Figure 153 on page 260 is displayed.

Foreground—Member Parts List (Option 4.12)

```
Menu  RefList  Utilities  Help
-----
                          Foreground Member Parts List

1 Browse/Print member parts
2 Write member parts data set

ISPF Library:
  Project . . . ISPFDemo
  Group . . . XXX
  Type . . .
  Member . . . (Blank or pattern for member selection list)

Language . . . (Defaults to Type value)

Groups for Primary members . . . 1 (1, 2, 3, or 4)

Output Data Set: (Option 2 only)
  Data Set Name . . .

Option ===>
  F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward  F9=Swap
  F10=Actions   F12=Cancel
```

Figure 153. Foreground Member Parts List Panel (ISRFP12)

The member parts list does not use the **Source Data Packed** option on the Foreground Selection panel; both packed and unpacked data sets can be read.

Fill in the fields on the Foreground Member Parts List panel as follows:

1. Select one of the options listed at the top of the panel by typing its number in the **Option** field.
2. Enter the appropriate ISPF library and concatenation sequence or data set names. A blank member name results in a member list being displayed. You can select only one member from this list. A pattern results in the processing of all member names matching the pattern; an asterisk results in all members being processed.

See the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* if you need help entering library or data set names, the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for information about using patterns and displaying member lists, and "Input Data Sets" on page 237 for more information about the concatenation sequence.

3. The **Language** field is optional. It is used to specify the language in which the source code is written. If you leave this field blank, ISPF uses the value in the **Type** field as the default. However, the language must be one of the following:
 - Assembler
 - COBOL
 - FORTRAN
 - Pascal
 - PLI
 - SCRIPT.
4. In the **Groups For Primary members** field, enter a number from 1–4. This number tells ISPF how many libraries in the concatenation sequence are to be used in locating primary members. For example, if you enter 2, the first and second libraries specified in the **Group** field are used to find primary members.
5. If you selected option 2 (write member parts data set), use the **Data Set Name** field to tell ISPF where to write the output data set. The name you enter:

Foreground—Member Parts List (Option 4.12)

- Can be a sequential data set or a member of a partitioned data set
- Must follow standard TSO data set naming conventions.

If you enter the name of a data set that does not exist, ISPF allocates it for you.

6. Once all the input parameters have been specified, press Enter to call the Foreground Member Parts List processor.

If the Session Manager is installed and if you specified Session Manager mode on the Foreground Selection panel, the Foreground Member Parts List processor and all function keys and PA keys are under control of the Session Manager. When processing is complete, you are prompted to enter a null line to return to ISPF control.

If the Session Manager is not called, the PA and function keys have their usual TSO-defined meanings; generally, the function keys are treated the same as Enter.

7. Communication with the Foreground Member Parts List processor is in line-I/O mode. Each time you see three asterisks, press Enter. These asterisks, which usually appear at the bottom of the screen, show that TSO is waiting for you to clear the screen before it can proceed.
8. The option you chose in step 1 on page 260 determines what happens next.

Note: If the Foreground Member Parts List processing program ends abnormally, ISPF displays a message in the upper-right corner of the screen and does not enter Browse mode. The list data set is retained, but the Foreground Print Options panel (see step 15 on page 232) is not displayed.

Option 1 (Browse/print member parts) creates the member parts list and displays it in Browse mode. Figure 154 shows an example.

BROWSE - Parts List for ISPFPROJ.ABL.PLI(*)-----

From	Via	From	Via	Member	To	Via	To	Via
-----	---	-----	---	-----	-----	---	-----	---
*****				TOP OF DATA	*****			
				(MEMBERA)				
				(MEMBERB)	MEMBERC	C		
				(MEMBERC)	MEMBERD	C	MEMBERE	I
					MEMBERG	C*		
				(MEMBERD)	MEMBERE	I		
MEMBERC	I	MEMBERD	I	(MEMBERE)				
				(MEMBERF)				
*****				BOTTOM OF DATA	*****			

Command ==>

Scroll ==>

PAGE

F1=Help

F2=Split

F3=Exit

F5=Rfind

F7=Up

F8=Down

F9=Swap

F10=Left

F11=Right

F12=Cancel

Figure 154. Member Parts List Display (ISRFP12B)

The figure shows that:

- Library ISPFPROJ.ABL.PLI contains these members:

Foreground—Member Parts List (Option 4.12)

MEMBERA	Has no calls or includes.
MEMBERB	Calls MEMBERC.
MEMBERC	Calls MEMBERD and MEMBERG, and includes MEMBERE. The asterisk (*) beside the C in the third VIA column means that MEMBERG was not found in the input library.
MEMBERD	Includes MEMBERE.
MEMBERE	Has no calls or includes.
MEMBERF	Has no calls or includes.

- A parts list is requested for all members in the first data set.

You can scroll the output up or down using the scroll commands. All the Browse commands are available to you. When you finish browsing the listing, enter the END command and continue with step 15 on page 232.

Option 2 (Write member parts data set) produces an intermediate sequential member parts list in the data set you named in step 5 on page 260. This data set can be either a sequential data set or a member of a partitioned data set.

If the data set has not been allocated, option 2 allocates it with a logical record length (LRECL) of 17, a block size (BLKSIZE) of 3009, and a record format (RECFM) of FB. The format of the records is shown in Table 22:

Table 22. Foreground Member Parts List Record Formats

Field Name	Format	Description
Member name	CHAR(8)	Subject member.
Called by or calls member name	CHAR(8)	Referenced member.
Call flag	BIT(1)	Found on a CALL statement.
Include flag	BIT(1)	Found by INCLUDE or COPY.
Not found flag	BIT(1)	Referenced member not found.
From flag	BIT(1)	Subject member called from referenced member.
To flag	BIT(1)	Referenced member called from subject member.
COBOL flag	BIT(1)	Member referenced outside valid COBOL division.
Reserved	BIT(2)	Field that is reserved.

9. You can do one of the following:
 - Enter other parameters and call the same processor.
 - Enter the END command to return to the Foreground Selection panel and select another processor.
 - Enter the RETURN command to go to the ISPF Primary Option Menu.
 - Use the jump function (=) to choose any primary option.

Member Not Found

A *primary library* is one of the number of libraries specified in the **Groups For Primary members** field. A *primary member* is a member that starts the member parts explosion chain. An *explosion chain* is the order in which members are nested, starting with the primary member and continuing through each member that it includes, calls, or copies.

The chain is broken when a member cannot be found in the set of concatenated libraries or no more members are referenced. If a member cannot be found, the name is flagged with an asterisk (*) and processing continues. For instance, internally-called routines are not found.

When no more primary members can be found, the listing is printed, written, or browsed. Calls to internal routines or variable names result in the member not found flag being set.

C/370 Compile (Option 4.13)

ISPF supports the C/370 compiler through dialogs supplied with the C/370 compiler (5688-040). Refer to *C Compiler User's Guide for MVS*, SC09-1129 for additional information. If ISPF cannot access the C/370 compiler it displays the information panel shown in Figure 155.

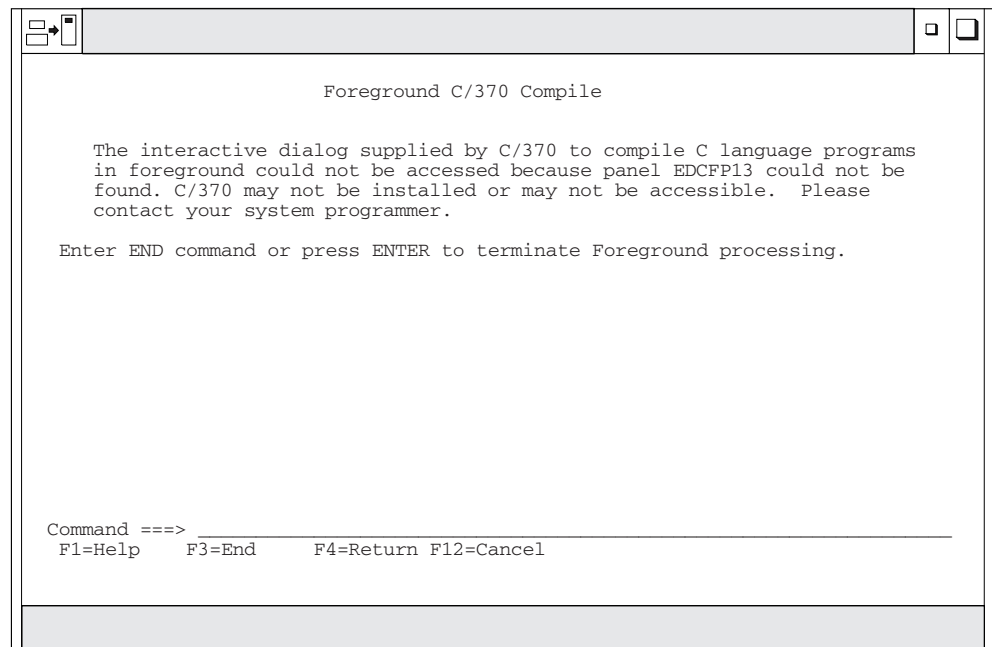


Figure 155. Foreground C/370 Compile Panel (ISRFP13)

REXX/370 Compile (Option 4.14)

ISPF supports the REXX/370 compiler through dialogs supplied with the REXX/370 compiler (5695-013). Refer to *IBM Compiler and Library for REXX/370 User's Guide and Reference*, SH19-8160, for additional information.

If ISPF cannot access the REXX/370 compiler, it displays the information panel shown in Figure 156 on page 264.

Foreground—Ada/370 Compile (Option 4.15)

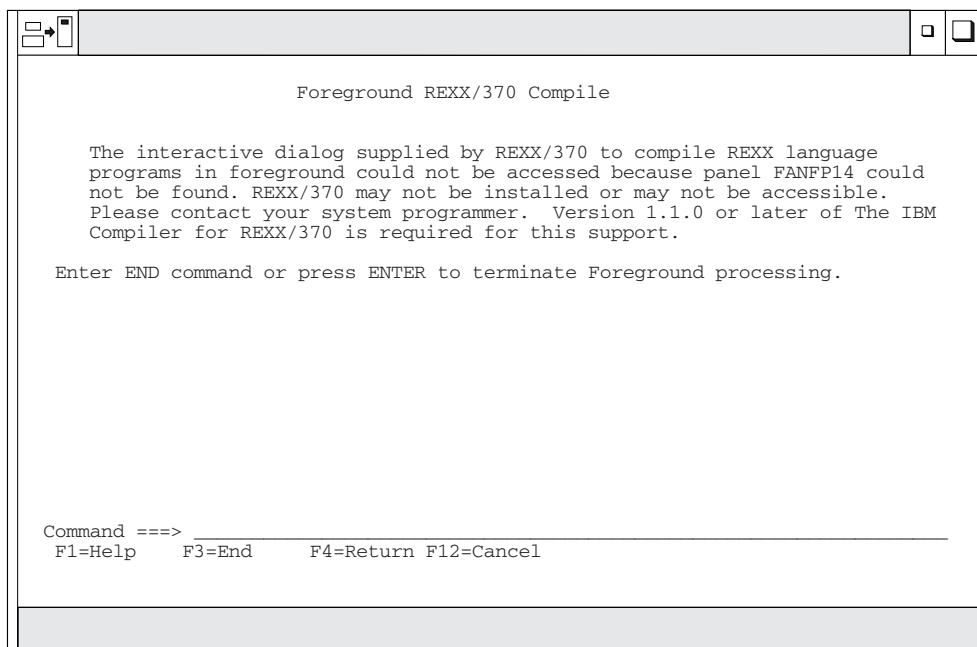


Figure 156. Foreground REXX/370 Compile Panel (ISRFP14)

Ada/370 Compile (Option 4.15)

ISPF supports the Ada/370 compiler and its tools through dialogs supplied with the Ada/370 compiler (5706-292). Refer to *IBM Ada/370 User's Guide* SC09-1415, for additional information.

If ISPF cannot access the Ada/370 compiler, it displays the information panel shown in Figure 157.

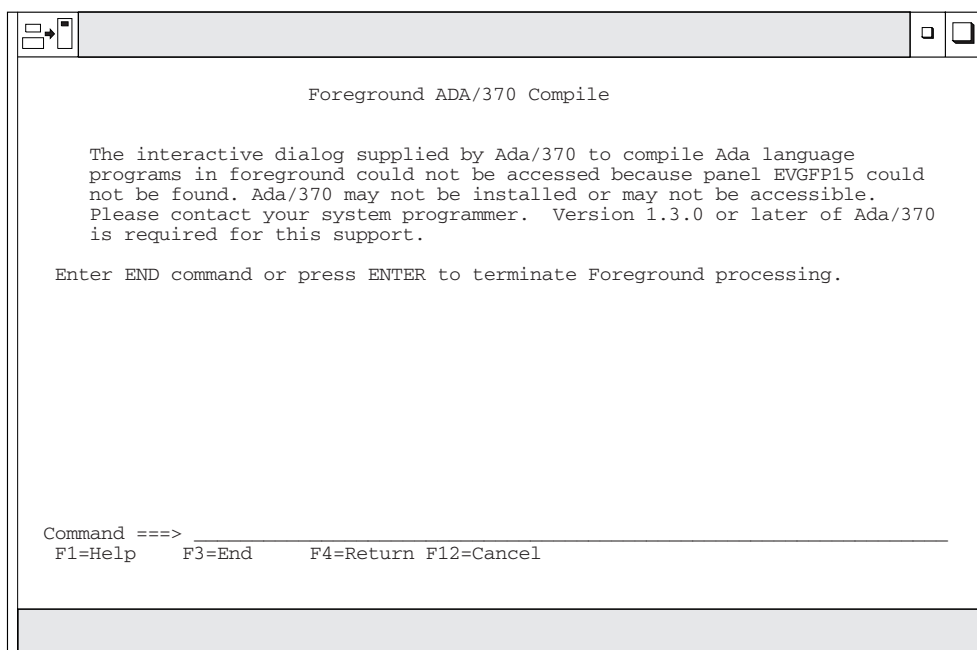


Figure 157. Foreground Ada/370 Compile Panel (ISRFP15)

AD/Cycle C/370 Compile (Option 4.16)

ISPF supports the AD/Cycle* C/370 compiler through dialogs supplied with the AD/Cycle C/370 compiler (5688-216). Refer to *IBM SAA AD/Cycle C/370 Programming Guide* SC09-1356, for additional information.

If ISPF cannot access the AD/Cycle C/370 compiler, it displays the information panel shown in Figure 158.

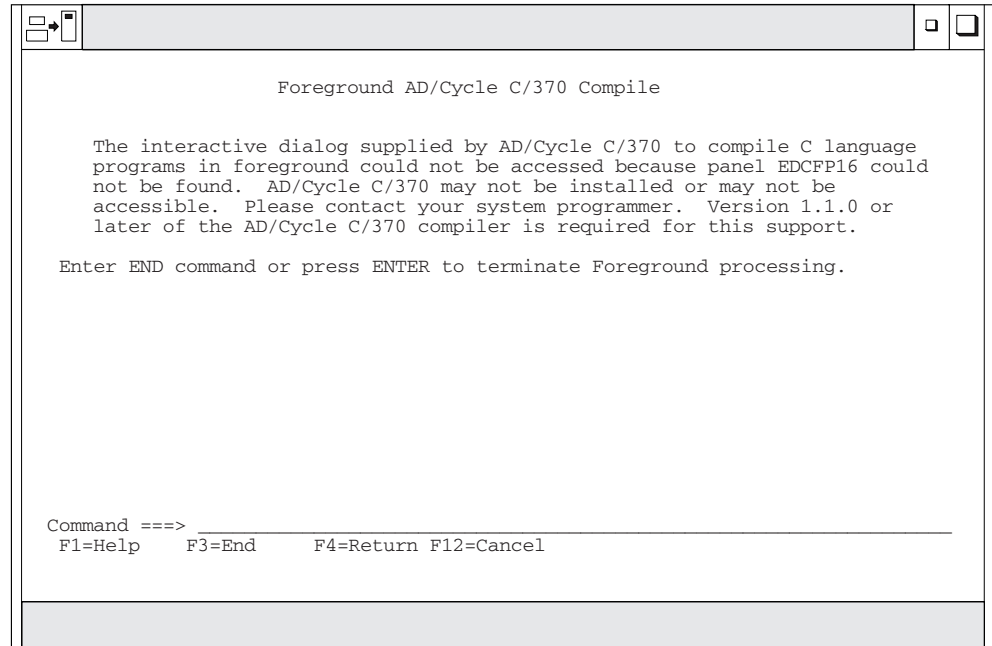


Figure 158. Foreground AD/Cycle C/370 Compile Panel (ISRFP16)

ISPDTLC (Option 4.18)

ISPF supports the ISPF Dialog Tag Language compiler by running the ISPDTLC function. Refer to *ISPF Dialog Tag Language Guide and Reference* for more information about DTL.

The ISPDTLC interface panel appears as shown in Figure 159, Figure 160, and Figure 161 on page 267

Foreground—ISPD TLC (Option 4.18)

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu Utilities Commands Language Options Help

ISPF Dialog Tag Language Conversion Utility - 5.0

Click here: Go to DTL input names 5-16 Reset DTL input names 2-16

Enter requested information: Current Language: ENGLISH More: +

Member name (Blank or pattern for member list)

DTL Source data set - 1 'P020136.GML'

DTL Source data set - 2

DTL Source data set - 3

DTL Source data set - 4

Panel data set 'P020136.PANELS'

Message data set 'P020136.MSGS'

Log data set

Log File Member name (Required when log file is a PDS)

List data set

List File Member name (Required when list file is a PDS)

SCRIPT data set

Command ==>

F1=Help F2=Split F3=Exit F7=Backward F8=Foward

F9=Swap F10=Actions F12=Cancel

Figure 159. Foreground ISPD TLC Compile Panel (ISPCP01) Screen 1

Figure 160. Foreground ISPD TLC Compile Panel (ISPCP01) Screen 2

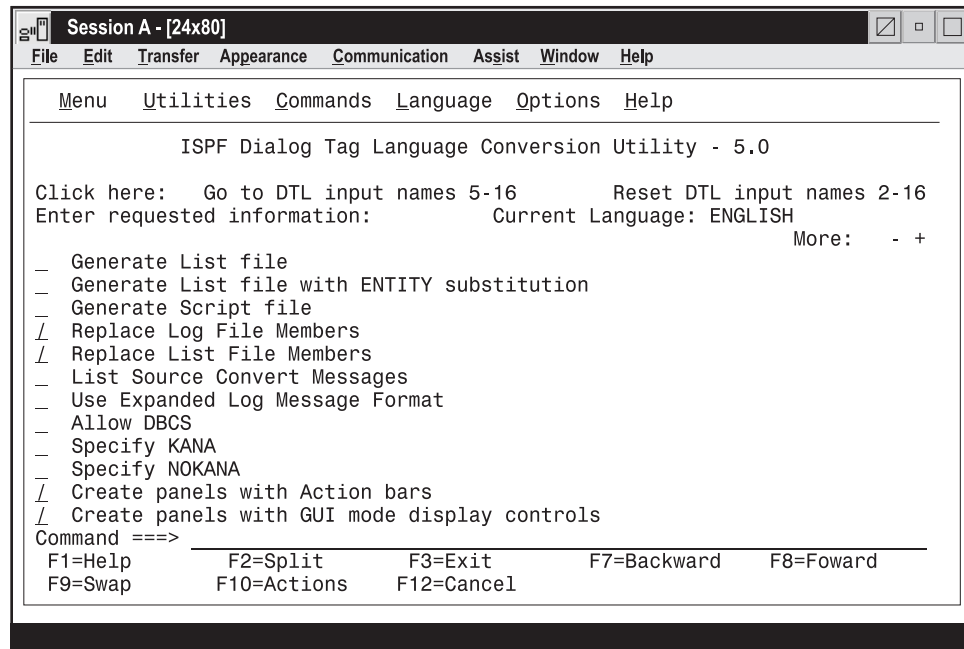


Figure 161. Foreground ISPD TLC Compile Panel (ISPCP01) Screen 3

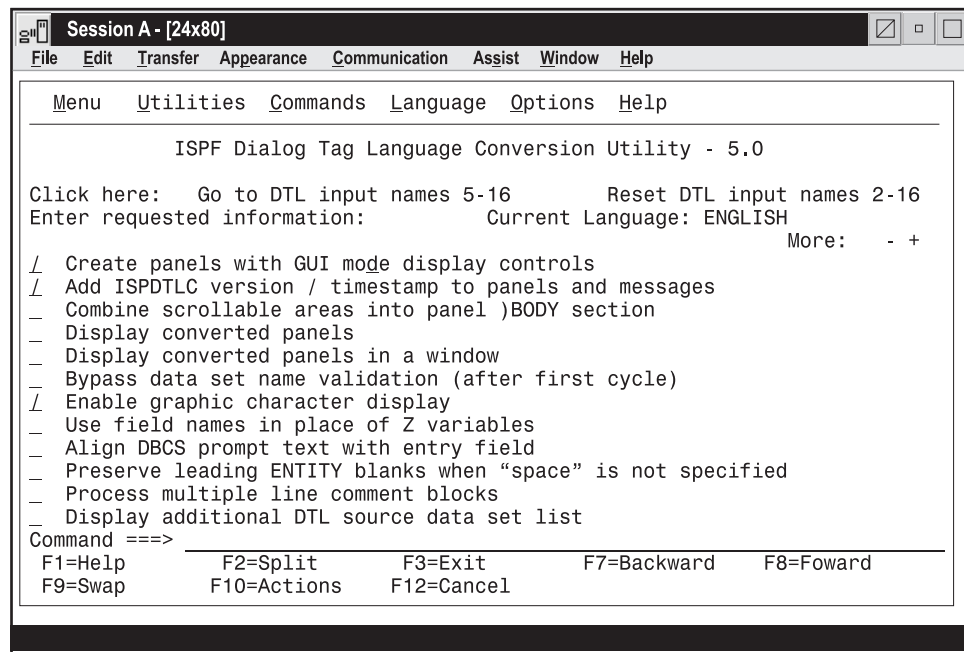


Figure 162. Foreground ISPD TLC Compile Panel (ISPCP01) Screen 4

Foreground—ISPD TLC (Option 4.18)

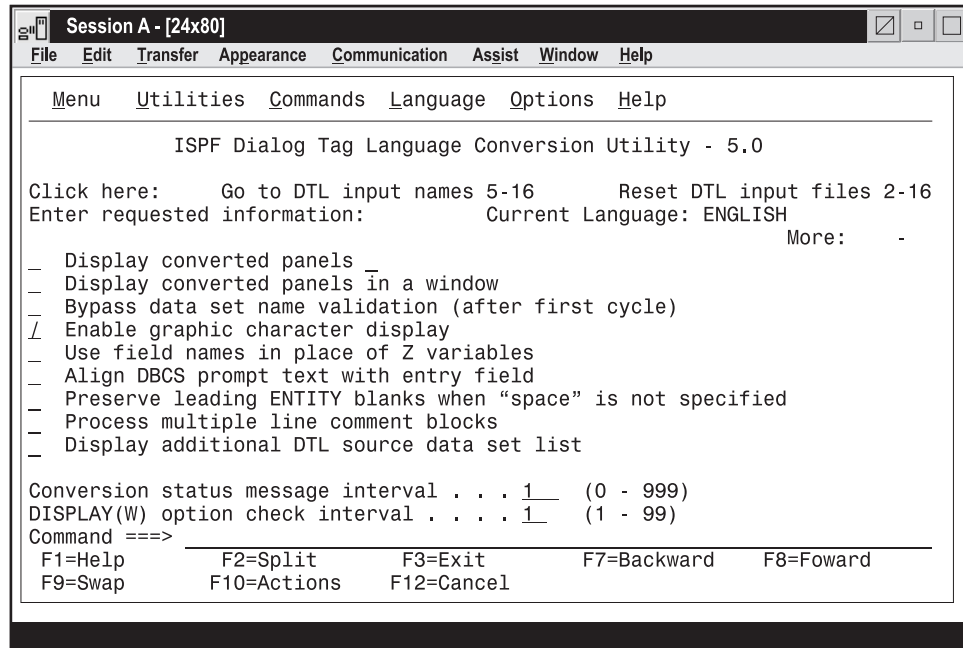


Figure 163. Foreground ISPD TLC Compile Panel (ISPCP01) Screen 5

The fields on this panel are explained in *ISPF Dialog Tag Language Guide and Reference*

OS/390 C/C++ Compile (Option 4.19)

ISPF supports the C/C++ for MVS/ESA compiler and its tools through dialogs supplied with the C/C++ for MVS/ESA compiler (5655-121). For information about C/C++ for MVS/ESA, refer to the *C/MVS User's Guide* and the *C++/MVS User's Guide*

If ISPF cannot access the C/C++ for MVS/ESA compiler, it displays the information panel shown in Figure 164 on page 269.

Foreground—C/C++ for MVS/ESA Compile (Option 4.19)

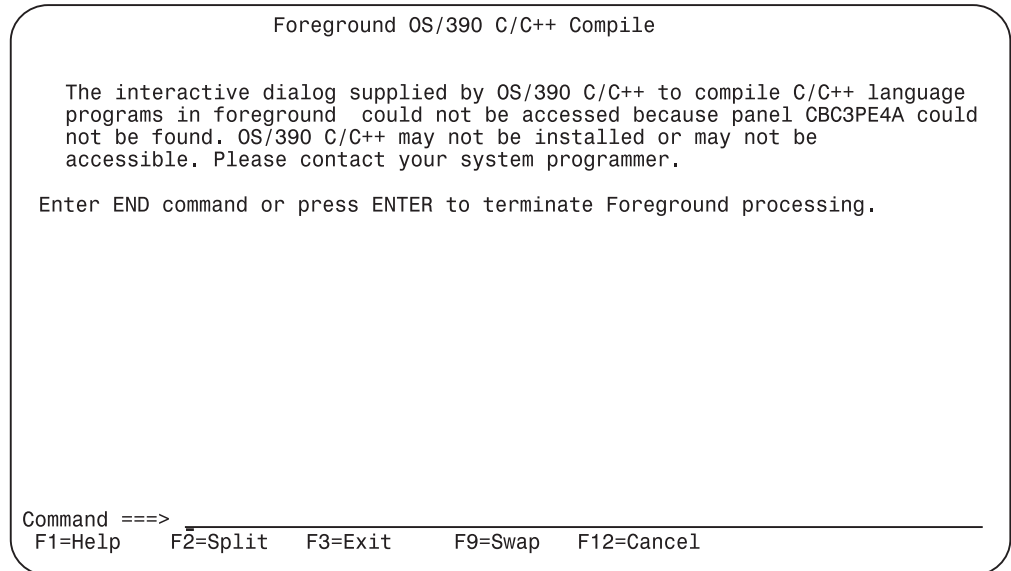


Figure 164. Foreground C/C++ for MVS/ESA information Panel (ISRFP19)

z/OS C/C++ Compile (Option 4.20)

ISPF supports the z/OS C/C++ compiler and its tools through dialogs supplied with the z/OS C/C++ compiler (5694-A01). For information about z/OS C/C++, refer to the z/OS C/C++ User's Guide.

If ISPF cannot access the z/OS C/C++ compiler, it displays the information panel shown below.

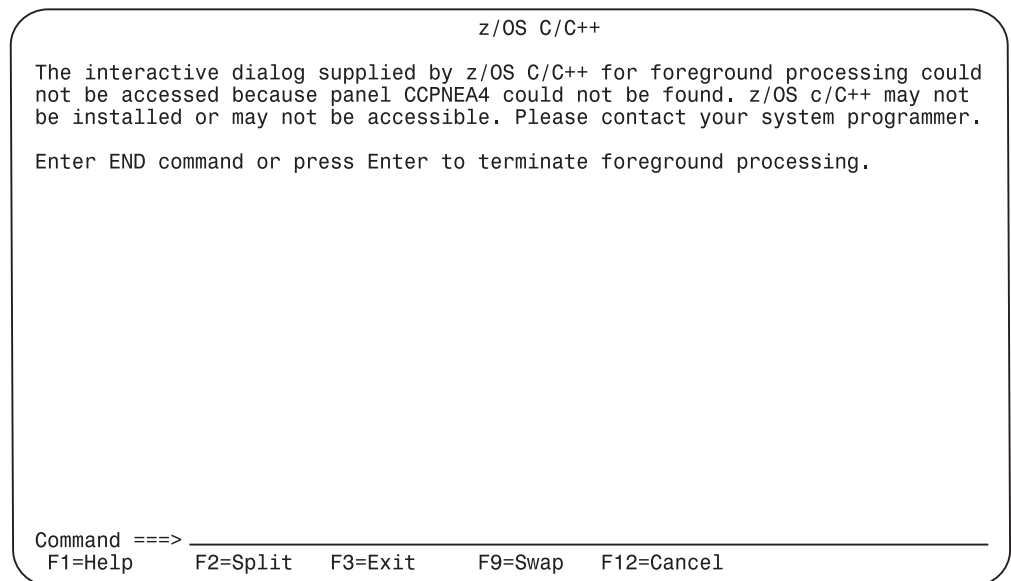


Figure 165. Foreground C/C++ for z/OS information Panel (ISRFP20)

Chapter 6. Batch (Option 5)

The Batch option (5) allows ISPF to run the batch processors shown on the Batch Selection panel, Figure 166, as batch jobs. ISPF generates job control language (JCL) for the job, based on information you enter on the batch processing panels, and then submits the job for processing. All these processors, plus SCRIPT/VS, COBOL interactive debug, and FORTRAN interactive debug, are also available with the Foreground option (4).

When you run a batch processor, you can continue using ISPF while the program is running. However, if you run these processors by using the Foreground option, you must wait for processing to end before doing anything else with ISPF. The Foreground Selection panel is shown in Figure 136 on page 229.

Menu Utilities Help

Batch Selection Panel

More : +

1 Assembler	7 *Binder/Link editor	15 *ADA/370
2 COBOL	10 *VS COBOL II debug	16 *AD/Cycle C/370
3 VS FORTRAN	12 Member Parts List	18 ISPD TLC
5 PLI	13 *C/370	19 *OS/390 C/C++
6 VS PASCAL	14 *REXX/370	20 *z/OS C/C++

Enter "/" to select option * No packed data support

/ Source data online

- Source data packed

Job Statement Information: Verify before proceeding

====> /*KEENEB JOB (ACCOUNT).'NAME'

====> /*

====> /*

====> /*

Option ==>

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F10=Actions F12=Cancel

Figure 166. Batch Selection Panel (ISRJPA)

The names of the batch processors on this panel are point-and-shoot fields. See the **Point-and-Shoot Text Fields** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for more information.

Batch Selection Panel Action Bar

The Batch Selection Panel action bar choices function as follows:

Menu

See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Batch (Option 5)

Help

The Help pull-down offers you the following choices:

- 1 General
- 2 Assembler
- 3 COBOL
- 4 VS Fortran
- 5 PL/I
- 6 VS Pascal
- 7 Binder/Linkage editor
- 8 VS COBOL II debug
- 9 Member parts list
- 10 C/370
- 11 REXX/370
- 12 Ada/370
- 13 AD/Cycle C/370
- 14 ISPD TLC
- 15 O/S 390 C/C++
- 16 z/OS C/C++
- 17 Appendices

Batch Processing Sequence

The main batch processing sequence is:

1. If you do not know whether the source data is in packed format, find out by editing the data set and entering the PROFILE command. The profile shows either PACK ON (data is stored in packed format) or PACK OFF (data is not stored in packed format).
If the data is not packed, continue with the next step.
If the data is packed, you should read “Expanding Packed Data” on page 233, paying close attention to information that applies to the batch processor you plan to use. When you are satisfied that the data set is ready to be processed, save the data set if you are in Edit and continue with the next step.
2. Select a batch processor. If you bypass the Batch Selection panel, you cannot verify or change the job statement parameters, or generate multiple compilations (multiple job steps) or link edits within the same job.
3. Select the Source data online option to tell ISPF that the data to be processed resides on a currently mounted volume. ISPF checks the data set information that you entered on the Batch Selection panel and allows you to display a member list. If you do not select this option, ISPF assumes that the data cannot be accessed except by the batch job and does not verify the existence or validity of the specified data set.
4. Select the Source data packed option to tell ISPF that it needs to expand the source data. This option has no effect on the member parts list option (5.12). Member parts list can read both packed and unpacked data sets, so no expansion is needed.
5. Enter any job statement information you need. See the **Job Statement Information** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information.
6. Press Enter. ISPF displays the data entry panel for the processor you selected.

Note: The remainder of this processing sequence applies to all batch processors except Member Parts List. See “Member Parts List (Option 5.12)” on page 283 for more information.

7. Enter the appropriate ISPF library and concatenation sequence or data set names.

For VS COBOL II interactive debug, enter the name of the input object module or load module. The TYPE, or last qualifier, must be either OBJ or LOAD. However, if you specify an OBJ data set as your input data set, you must include a load library or data set in the input search sequence (see step 11).

ISPF displays a member list if you omit the member name or use a pattern. See the **Naming ISPF Libraries and Data Sets** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* if you need help entering library or data set names, "Input Data Sets" on page 237 for more information about the concatenation sequence, and the **Displaying Member Lists** section of the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I* for more information about displaying member lists.

Notes:

- a. VS FORTRAN has no LIB option. However, the concatenation sequence is still used to find the member to be compiled.
- b. Password protection is not supported from the Batch option. Therefore, if your input or output data sets are password-protected, use the Foreground option, which does support passwords.

If you submit a job requiring a password-protected data set, the system operator will be requested to enter the required password.

8. The List ID field tells ISPF what to name the output listing. Leave this field blank and enter a SYSOUT class to send the listing to a printer. See "List Data Sets" on page 238 for more information.
9. Enter a SYSOUT class to generate hardcopy of the listing. You can enter any valid SYSOUT parameter. If a List ID is entered, this field is ignored.
10. The **Options** field, whether ASSEMBLER, COMPILER, or LINKAGE EDITOR, is remembered from one session to another. Therefore, you do not need to change these fields unless the options or parameters you need are not displayed.

If you need information about the options available for your processor, refer to the documentation that shipped with the processor.

11. Enter any additional input libraries you need. For VS COBOL II interactive debug, enter any input LOAD libraries that you need to complete the search. These libraries must be LOAD libraries only. See "Input Data Sets" on page 237 if you need help.
12. Once all the input fields have been specified, press Enter to call the batch processor. ISPF generates the appropriate JCL statements. See "JCL Generation—Compilers" on page 274 and "JCL Generation—Assemblers and Linkage Editor" on page 276 for more information.

Note: You can leave the entry panel without generating any JCL by entering the END command instead of pressing Enter.

13. One of the following occurs:
 - If you used the jump function to bypass the Batch Selection panel, ISPF submits the generated JCL and returns directly to the ISPF Primary Option Menu.

ISPF calls the TSO SUBMIT command to submit a job. The SUBMIT command displays the following message:

```
JOB useridA(JOB nnnnn) SUBMITTED
***
```

Batch—Processing Sequence

When you press Enter or any other interrupt key, ISPF returns to the previous panel.

- Otherwise, ISPF returns to the Batch Selection panel with the message Job step generated displayed in the short message area on line 1, as shown in Figure 167.

Menu Utilities Help		
Batch Selection Panel		
		More : +
1 Assembler	7 *Binder/Link editor	15 *ADA/370
2 COBOL	10 *VS COBOL II debug	16 *AD/Cycle C/370
3 VS FORTRAN	12 Member Parts List	18 ISPD TLC
5 PLI	13 *C/370	19 *OS/390 C/C++
6 VS PASCAL	14 *REXX/370	20 *z/OS C/C++
* No packed data support		
Instructions:		
Enter option to continue generating JCL, CANCEL command to exit without submitting job for END command to exit without submitting job.		
Enter "/" to select option		
/_ Source data online		
_ Source data packed		
Job Statement Information:		
Option ==> =		
F1=Help	F2=Split	F3=Exit
F10=Actions	F12=Cancel	F7=Backward F8=Forward F9=Swap

Figure 167. Batch Selection Panel with JCL Generated (ISRJPB)

The job statement parameters are shown for information only. They are no longer intensified, and you cannot type over them because the JOB statement has already been generated. At this point, you can:

- Select the same or another processor to cause more JCL to be generated
- Go to the ISPF Primary Option Menu by:
 - Canceling the batch job by entering the CANCEL command
 - Entering the END or RETURN command to cause the generated JCL to be submitted for processing.
- Use the jump function (=) to choose any primary option. If any JCL has been generated, it is submitted for batch processing.

JCL Generation—Compilers

Figure 171 on page 279 shows an example for the PL/I optimizing compiler. This panel is typical of the batch compiler entry panels. After you fill in an entry panel and press Enter, ISPF generates the appropriate JCL statements. The JCL that would be generated for the PL/I example is:

```
//SCAN EXEC PGM=ISRLEMX,COND=(12,LE),
// PARM=('PLI,TOPSEG,B,N,E,4, ,00,ENU,4,7',
// '1,/,VIO')
//*
//* INSERT STEPLIB DD CARDS HERE FOR ISRLEMX AND THE NATIONAL
//* LANGUAGE LITERAL LOAD MODULE IF THEY ARE NOT IN YOUR SYSTEM
//* LIBRARY
//*
//ISRLCODE DD DSN=ISPFDEMO.XXX.PLI0,DISP=SHR
// DD DSN=ISPFDEMO.A.PLI0,DISP=SHR
// DD DSN=ISPFDEMO.MASTER.PLI0,DISP=SHR
```

```
//ISRLEXP DD UNIT=SYSDA,DISP=(NEW,PASS),SPACE=(CYL,(2,2)),
//          DSN=&&TEMP1
//ISRLMSG DD SYSOUT=(A)
//PLIO EXEC PGM=IEL0AA,REGION=1024K,COND=(12,LE),
//          PARM='MACRO,XREF'
//SYSPRINT DD DSN=ISPFDEMO.LISTPLIO.LIST,UNIT=SYSDA,
//            SPACE=(CYL,(2,2)),DISP=(MOD,CATLG),
//            DCB=(RECFM=VBA,LRECL=125,BLKSIZE=3129)
//SYSIN DD DSN=&&TEMP1,DISP=(OLD,DELETE)
//SYSLIB DD DSN=ISPFDEMO.XXX.PLIO,DISP=SHR
//          DD DSN=ISPFDEMO.A.PLIO,DISP=SHR
//          DD DSN=ISPFDEMO.MASTER.PLIO,DISP=SHR
//          DD DSN=ISPFTEST.FLAG.PLIO,DISP=SHR
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(2,2))
//SYSLIN DD DSN=ISPFDEMO.XXX.OBJ(TOPSEG),DISP=OLD
```

The JCL is generated in two steps:

1. The first step processes one of the following scan programs, which are distributed as part of ISPF:

ISRSCAN

Copies one member.

ISRLEMX

Copies the primary member, expands any included members, and unpacks any packed members.

The selected scan program searches the user-specified sequence of concatenated libraries to find the designated member. If the scan program finds the member, it copies the member to a temporary sequential data set that is shown by &&TEMP1 and generated by the system. The scan program then exits with a return code of zero, if no errors are found. If any errors are found, the scan program exits with one of the following return codes, which prevent the processing of the second job step. Table 23 describes ISRLEMX return codes.

Table 23. *ISRSCAN and ISRLEMX Return Codes*

ISRSCAN		ISRLEMX	
12	Member not found.	1 - 15	Parameter <i>n</i> was too long, where <i>n</i> = 1 to 15.
16	OPEN error on DDNAME=IN.	16	Too many parameters.
20	I/O error on DDNAME=IN.	17	Too few parameters.
24	OPEN error on DDNAME=OUT.	20	Severe error in expand module. An error message should be printed in the ISRLMSG data set.
28	I/O error on DDNAME=OUT.		

2. In this example, the second step calls the PL/I optimizing compiler by using the temporary data set designated by &&TEMP1 as the input data set. The concatenation sequence is passed to the compiler through SYSLIB DD statements, to allow inclusion of subsidiary members referenced by %INCLUDE statements in the source text.

The object module is directed to a partitioned data set with a three-level name composed of the project name, the first library name, and a type qualifier of OBJ. The member name for the object module is the same as the primary member to be compiled.

The compiler listing is directed to SYSOUT class A, as specified.

JCL Generation—Assemblers and Linkage Editor

For batch assembly and link edit, an optional SYSTERM DD statement is generated (if you specify TERM) besides the JCL shown in “JCL Generation—Compilers” on page 274, as follows:

```
//SYSTERM DD DSN=prefix.member.TERM,DISP=(MOD,CATLG)
```

where:

prefix The data set prefix in your TSO user profile

member

For members of partitioned data sets, this is the same member name specified on the entry panel. For sequential data sets, this name is TEMPNAME.

Assembler (Option 5.1)

Batch Assembler enables you to invoke either the High Level Assembler or Assembler H. Both are called from the Batch Assembler panel, shown in Figure 168. For information about Assembler allocation data sets, see the appendix called **Allocation Data Sets** in the *ISPF User's Guide Volume I*.

The screenshot shows the 'Batch Assembler' panel with the following fields and options:

- ISPF Library:**
 - Project: PDFTDEV
 - Group: ROMAR
 - Type: ASM
 - Member: (Blank or pattern for member selection list)
- Other Partitioned or Sequential Data Set:**
 - Data Set Name: (Blank)
- Assembler:**
 - List ID: (Blank for hardcopy)
 - SYSOUT class: * (For hardcopy)
 - Options: 1. High Level Assembler, 2. Assembler H
- Assembler Options:**
 - Term: TERM (TERM or NOTERM)
 - Other: (Blank)
- Command ===>**
 - F1=Help, F2=Split, F3=Exit, F7=Backward, F8=Forward, F9=Swap
 - F10=Actions, F12=Cancel

The panel title is 'Session A - [24x80]' and the bottom right corner shows '09/019'.

Figure 168. Batch Assembler Panel (ISRJP01)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in “List Data Sets” on page 238, **Additional input libraries**, which is explained in “Input Data Sets” on page 237, and the following:

Term In the **Term** field, enter TERM if you want ISPF to generate a terminal data set. A *terminal data set* contains a synopsis of the error messages produced by Assembler XF. If the input data set is partitioned, the terminal data set name is:

```
prefix.member.TERM
```

Batch—Assembler (Option 5.1)

where *prefix* is the data set name prefix in your TSO user profile, if you have one, and *member* is the name of the member being assembled. However, if the input data set is sequential, the terminal data set name is: `prefix.TEMPNAME.TERM`

Enter NOTERM in the **Term** field to avoid generating the terminal data set. This is a required field.

Other Enter any other options you need in the **Other** field.

COBOL Compile (Option 5.2)

ISPF generates an ISPEXEC SELECT PGM(IGYCRCTL) statement to invoke a COBOL compiler using the values you enter on the Batch COBOLCompile panel, shown in Figure 169. For information about COBOL allocation data sets, see the appendix called **Allocation Data Sets** in the *ISPF User's Guide Volume I*.

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu RefList Utilities Help

Batch COBOL Compile More: +

ISPF Library:

Project . . . PDFTDEV

Group . . . HELEN

Type . . . COBOL

Member . . . (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:

Data Set Name . . .

List ID (Blank for hardcopy)

SYSOUT class. . . . * (If hardcopy requested)

Compiler options:

Term . . . NOTERM (TERM or NOTERM)

Other . . .

Additional input libraries:

Command ===>

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F10=Actions F12=Cancel

07/024

Figure 169. Batch COBOL Compile Panel (ISRJP02)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Term In the **Term** field, enter TERM if you want ISPF to generate a terminal data set. A *terminal data set* contains a synopsis of the error messages produced by Assembler XF. If the input data set is partitioned, the terminal data set name is: `prefix.member.TERM`

where *prefix* is the data set name prefix in your TSO user profile, if you have one, and *member* is the name of the member being assembled. However, if the input data set is sequential, the terminal data set name is: `prefix.TEMPNAME.TERM`

Batch— COBOL Compile (Option 5.2)

Enter NOTERM in the **Term** field to avoid generating the terminal data set. This is a required field.

Other If you plan to run VS COBOL II interactive debug after you compile your program, enter TEST, RESIDENT, and any other options you need in the **Other** field.

VS FORTRAN Compile (Option 5.3)

The Batch VS FORTRAN Compile panel is shown in Figure 170.

```
Menu  RefList  Utilities  Help
-----
Batch VS FORTRAN Compile
More:  +

ISPF Library:
Project . . . ISPFDEMO
Group . . . XXX
Type . . . FORT
Member . . . (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . .

List ID . . . (Blank for hardcopy listing)
SYSOUT class . . . A (If hardcopy requested)

Compiler options:
Term . . . NOTERM (TERM or NOTERM)
Other . . . LOAD,NODECK,SOURCE

Command ==>
F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel
```

Figure 170. Batch VS FORTRAN Compile Panel (ISRJP03)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

Term In the **Term** field, enter TERM if you want ISPF to generate a terminal data set. A *terminal data set* contains a synopsis of the error messages produced by the VS FORTRAN compiler. If the input data set is partitioned, the terminal data set name is:

prefix.member.TERM

where *prefix* is the data set name prefix in your TSO user profile, if you have one, and *member* is the name of the member being assembled.

However, if the input data set is sequential, the terminal data set name is:

prefix.TEMPNAME.TERM

Enter NOTERM in the **Term** field to avoid generating the terminal data set. This is a required field.

Other If you plan to run FORTRAN interactive debug after you compile your program, enter TEST in the **Other** field, along with any other options you need.

PL/I Compile (Option 5.5)

The Batch PL/I Compile option enables you to invoke either OS PL/I Version 2 or PL/I for MVS and VM, using the values specified on the Batch PL/I compile panel shown in Figure 171.

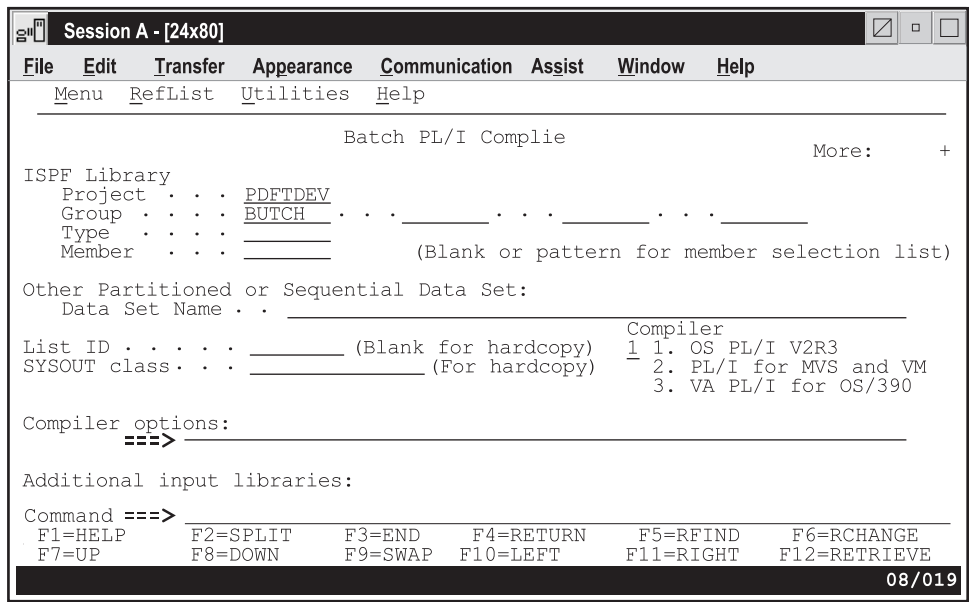


Figure 171. Batch PL/I Compile Panel (ISRJP05)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237, and the following:

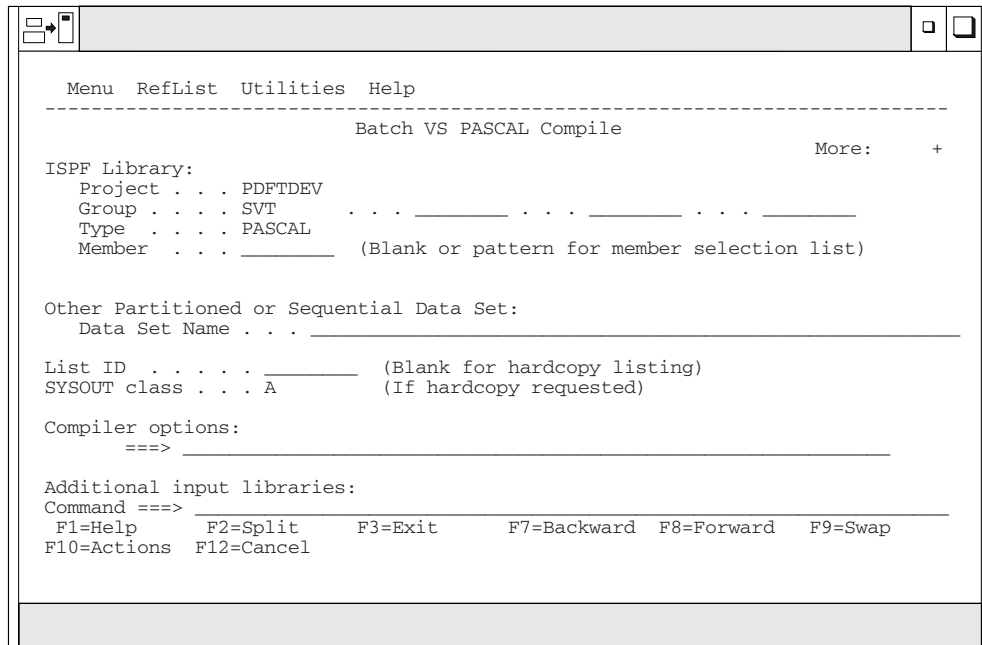
Compiler

Choose the compiler you want to use from the list presented.

VS Pascal Compile (Option 5.6)

The Batch VS Pascal Compile panel is shown in Figure 172 on page 280.

Batch—VS Pascal Compile (Option 5.6)



The screenshot shows a terminal window titled "Batch VS PASCAL Compile". At the top is a menu bar with "Menu", "RefList", "Utilities", and "Help". Below the menu bar is a dashed line, followed by the title "Batch VS PASCAL Compile" and a "More: +" button. The main area contains several sections of input fields:

- ISPF Library:**
 - Project . . . PDFDEV
 - Group . . . SVT
 - Type . . . PASCAL
 - Member . . . (Blank or pattern for member selection list)
- Other Partitioned or Sequential Data Set:**
 - Data Set Name . . .
- List ID** (Blank for hardcopy listing)
- SYSOUT class . . . A** (If hardcopy requested)
- Compiler options:**
 - ===>
- Additional input libraries:**
 - Command ===>
- Function Keys:**
 - F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
 - F10=Actions F12=Cancel

Figure 172. Batch VS Pascal Compile Panel (ISRJP06)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, **Additional input libraries**, which is explained in "Input Data Sets" on page 237.

Binder/Linkage Editor (Option 5.7)

The Batch Binder or Linkage Editor is called from the Batch Binder/Linkage editor panel. The panel in Figure 173 on page 281 shows entries you might make when link editing a VS Pascal program.


```

Menu  RefList  Utilities  Help
-----
Batch Binder/Linkage Editor
More:      +

ISPF Library:
Project . . . PDFTOOL
Group . . . COMMON . . . . .
Type . . . LEL
Member . . . (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . .

List ID . . . (Blank for hardcopy listing)
SYSOUT class . . . A (If hardcopy requested)

Linkage editor/binder options:
Binder . . (BINDER or NOBINDER)
Term . . . (TERM or blank)
Other . . .

Command ==>
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions  F12=Cancel

```

Figure 173. Batch Binder Linkage/Editor Panel (ISRJP07B)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User's Guide Volume I*, except List ID, which is explained in "List Data Sets" on page 238, and the following:

Binder

Determines whether the Linkage Editor (NOBINDER) or Binder (BINDER) is invoked.

Note: The binder is available only if DFSMS 1.1, or later, is installed.

Term In the **Term** field, enter TERM if you want ISPF to generate a terminal data set. A *terminal data set* contains a synopsis of the error messages produced by the linkage editor. If the input data set is partitioned, the terminal data set name is:

prefix.member.TERM

where *prefix* is the data set name prefix in your TSO user profile, if you have one, and *member* is the name of the member being assembled.

Note: Sequential data sets are invalid when using the Linkage Editor.

Leave the **Term** field blank to avoid generating the terminal data set.

Other Enter any other options you need in the **Other** field.

SYSLIB

The name of the data set that is to contain the ISPF library concatenation sequence used to resolve any copy statements specified in your program. See "Input Data Sets" on page 237 and the **SYSLIB Data Set** section of the appendix called **Allocation Data Sets** in the *ISPF User's Guide Volume I* for more information.

SYSLIN

The name of the data set that is to contain the object module. The **SYSLIN** field is provided to accommodate the VS Pascal XA and NOXA processing

Batch—Binder/Linkage Editor (Option 5.7)

options. See “Input Data Sets” on page 237 and the **SYSLIN Data Set** section of the appendix called **Allocation Data Sets** in the *ISPF User’s Guide Volume I* for more information.

VS COBOL II Interactive Debug (Option 5.10)

Before you can run VS COBOL II interactive debug in batch, you must first do the following, in the order shown:

1. Compile the program using the VS COBOL II compiler (option 4.2 or option 5.2) with the TEST and RESIDENT options.
2. Use the linkage editor (option 4.7 or option 5.7) to generate an output load module, which VS COBOL II interactive debug will use as input.

The VS COBOL II Interactive Debug panel is shown in Figure 174.

```
Menu  RefList  Utilities  Help
-----
VS COBOL II Interactive Debug                                More:  +

ISPF Library:
Project . . . . . ISPFDemo
Group . . . . . XXX      (Type = LOAD assumed)
Member . . . . .          (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
Data Set Name . . . . .

List ID . . . . .          (Blank for hardcopy listing)
SYSOUT class . . . . . A   (If hardcopy requested)

Debug command data set:
====>

Additional input libraries:
====>

Command ====>
F1=Help    F2=Split    F3=Exit    F7=Backward  F8=Forward  F9=Swap
F10=Actions F12=Cancel
```

Figure 174. VS COBOL II Interactive Debug Panel (ISRJP10)

All the fields on this panel are explained in the *Libraries and Data Sets* chapter of the *ISPF User’s Guide Volume I*, except List ID, which is explained in “List Data Sets” on page 238, **Additional input libraries**, which is explained in “Input Data Sets” on page 237, and the following:

Note: For VS COBOL II interactive debug, any additional input libraries that you enter to complete the search sequence must be LOAD libraries only.

Debug command data set

In the **Debug command data set** field, enter the name of the data set that contains the DEBUG command that you want VS COBOL II interactive debug to enter during batch processing. Refer to *VS COBOL II Application Programming Debugging Guide* for more information.

Member Parts List (Option 5.12)

When you select the Batch Member Parts List option (5.12), the panel shown in Figure 175 is displayed.

The only difference between this panel and the Foreground Member Parts List panel is that option 1 (print member parts) is called *Browse/Print member parts list* in foreground. The foreground version does not print your member parts list unless you use the Foreground Print Options panel to do so.

Otherwise, this version operates the same as the foreground version. See “Member Parts List (Option 4.12)” on page 259 for more information about using the member parts list function.

The listing is 120 characters wide and uses ANSI printer controls.

```

Menu  RefList  Utilities  Help
-----
Batch Member Parts List

1 Print member parts
2 Write member parts data set

ISPF Library:
Project . . . MYPROJ__
Group . . . PRIVATE_ . . . TEST____ . . . STAGE____ . . . BASE____
Type . . . _____
Member . . . _____ (Blank or pattern for member selection list)

Language . . . COB (Defaults to Type value)

Groups for Primary members . . . 1 (1, 2, 3, or 4)

SYSOUT class . . . A (Defaults to A )

Output Data Set: (Option 2 only)
Data Set Name . . _____
Option ===>
F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward   F9=Swap
F10=Actions   F12=Cancel

```

Figure 175. Batch Member Parts List Panel (ISRJP12)

C/370 Compile (Option 5.13)

ISPF supports the C/370 compiler through dialogs supplied with the C/370 compiler (5688-040). Refer to *C Compiler User's Guide for MVS*, SC09-1129 for additional information. If ISPF cannot access the C/370 compiler, it displays the information panel shown in Figure 176 on page 284.

Batch REXX/370 Compile (Option 5.14)

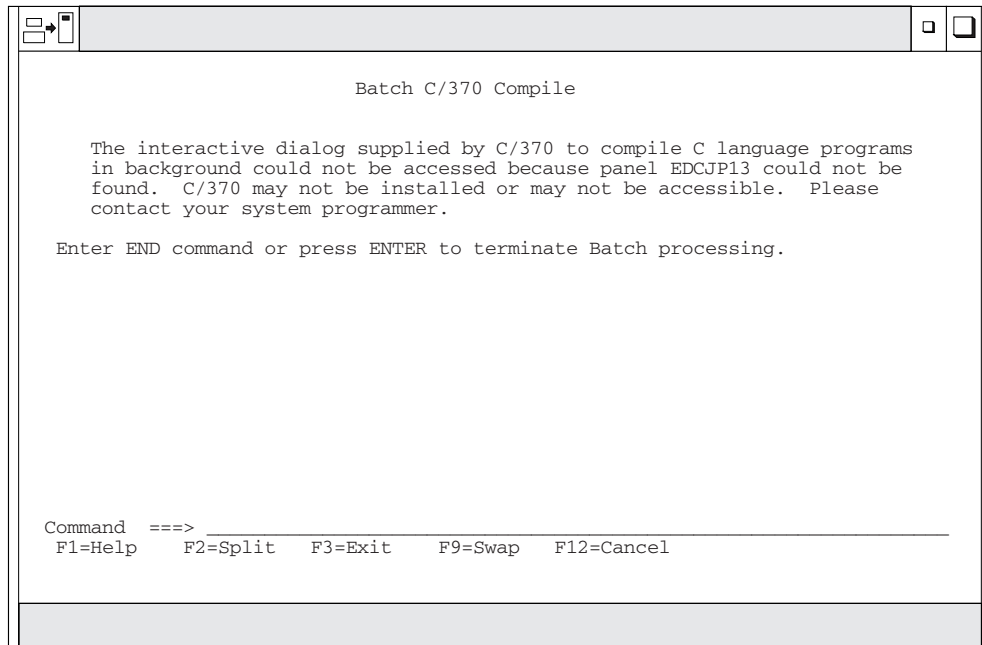


Figure 176. Batch C/370 Compile Panel (ISRJP13)

REXX/370 Compile (Option 5.14)

ISPF supports the REXX/370 compiler through dialogs supplied with the REXX/370 compiler (5695-013). Refer to *IBM Compiler and Library for REXX/370 User's Guide and Reference*, SH19-8160, for additional information.

If ISPF cannot access the REXX/370 compiler, it displays the information panel shown in Figure 177.

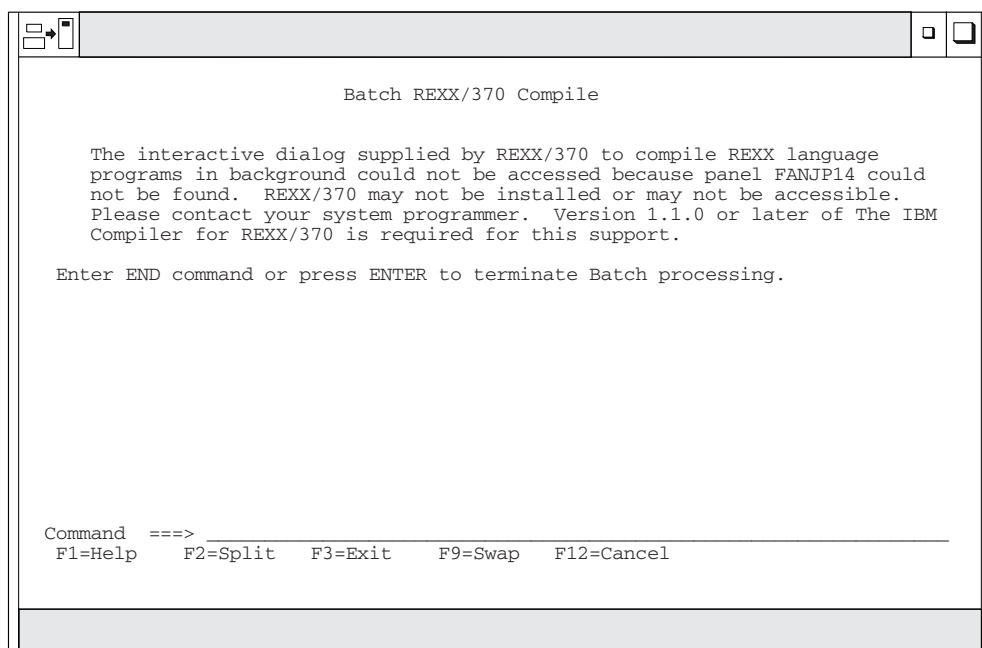


Figure 177. Batch REXX/370 Compile Panel (ISRJP14)

Ada/370 Compile (Option 5.15)

ISPF supports the Ada/370 compiler and its tools through dialogs supplied with the Ada/370 compiler (5706-292). Refer to IBM Ada/370 User's Guide, SC09-1415, for additional information.

If ISPF cannot access the Ada/370 compiler, it displays the information panel shown in Figure 178.

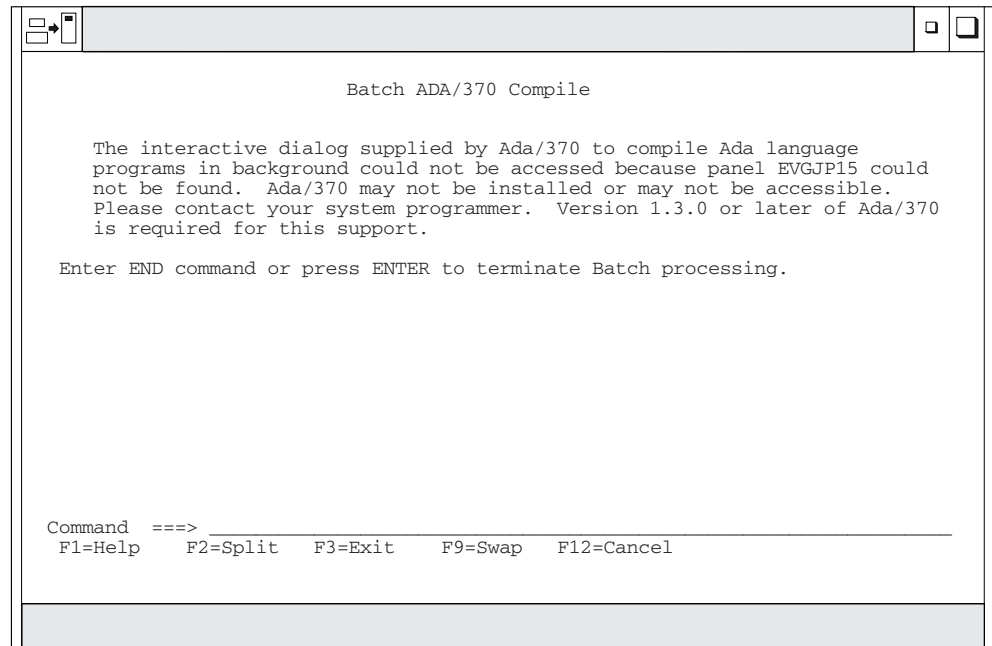


Figure 178. Batch Ada/370 Compile Panel (ISRJP15)

AD/Cycle C/370 Compile (Option 5.16)

ISPF supports the AD/Cycle C/370 compiler through dialogs supplied with the AD/Cycle C/370 compiler (5688-216). Refer to *IBM SAA AD/Cycle C/370 Programming Guide* SC09-1356, for additional information.

If ISPF cannot access the AD/Cycle C/370 compiler, it displays the information panel shown in Figure 179 on page 286.

Batch ISPD TLC Compile (Option 5.18)

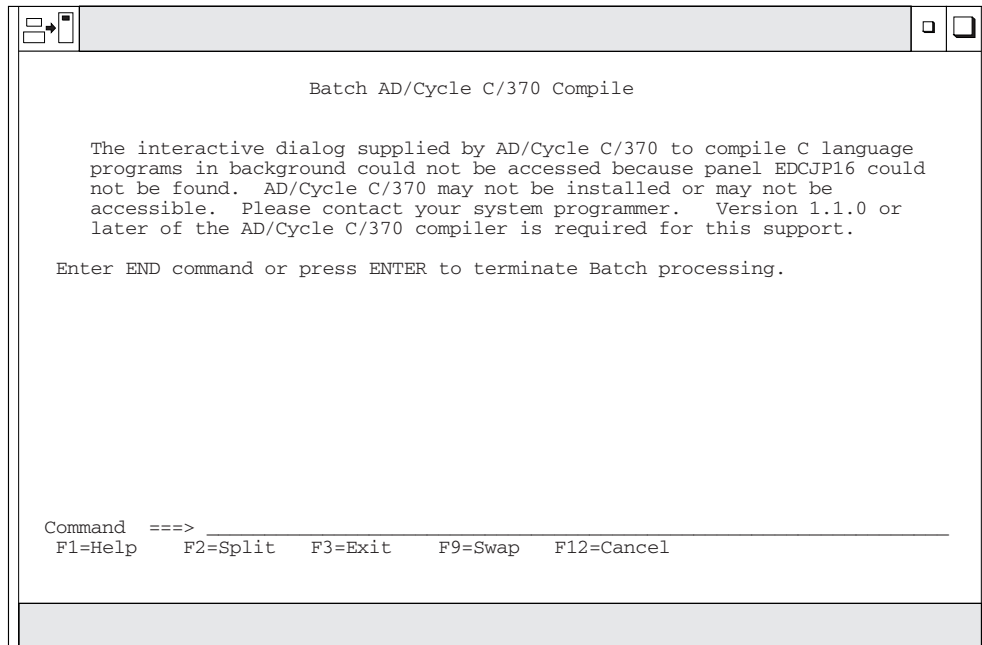


Figure 179. Batch AD/Cycle C/370 Compile Panel (ISRJP16)

ISPD TLC Compile (Option 5.18)

ISPF supports the ISPF Dialog Tag Language compiler by running the ISPD TLC function. Refer to *ISPF Dialog Tag Language Guide and Reference* for additional information.

The ISPD TLC interface panel is shown in Figure 180, Figure 181, and Figure 182 on page 287.

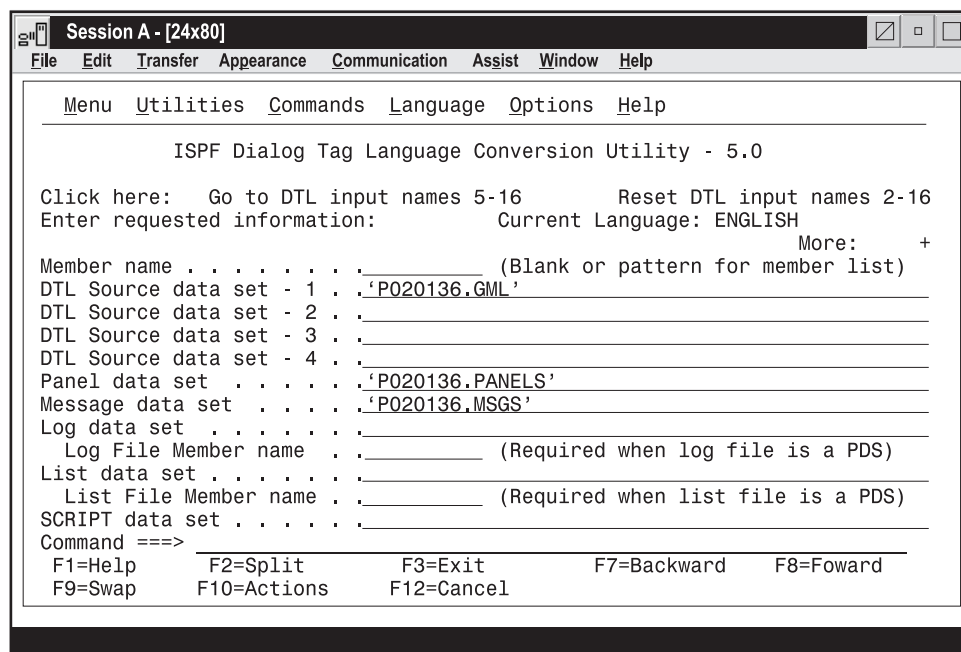


Figure 180. Batch ISPD TLC Compile Panel (ISPCP01) Screen 1

Batch ISPD TLC Compile (Option 5.18)

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu Utilities Commands Language Options Help

ISPF Dialog Tag Language Conversion Utility - 5.0

Click here: Go to DTL input names 5-16 Reset DTL input names 2-16

Enter requested information: Current Language: ENGLISH More: - +

SCRIPT data set

Tables data set

Keylist Application ID (Up to 4 characters)

Enter "/" to select option

- / Replace Panel/Message/Script/Keylist/Command Members
- / Preprocess Panel Output
- Place ISPD TLC Messages in log file
- Suppress Messages (ISPD TLC formatting)
- Suppress Messages (CUA exceptions)
- / Use CUA Panel Attributes
- / Generate Statistics on Panel/Message/Script Members
- Generate List file

Command ===>

F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Foward
F9=Swap	F10=Actions	F12=Cancel		

Figure 181. Batch ISPD TLC Compile Panel (ISPCP01) Screen 2

Session A - [24x80]

File Edit Transfer Appearance Communication Assist Window Help

Menu Utilities Commands Language Options Help

ISPF Dialog Tag Language Conversion Utility - 5.0

Click here: Go to DTL input names 5-16 Reset DTL input names 2-16

Enter requested information: Current Language: ENGLISH More: - +

- Generate List file
- Generate List file with ENTITY substitution
- Generate Script file
- / Replace Log File Members
- / Replace List File Members
- List Source Convert Messages
- Use Expanded Log Message Format
- Allow DBCS
- Specify KANA
- Specify NOKANA
- / Create panels with Action bars
- / Create panels with GUI mode display controls

Command ===>

F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Foward
F9=Swap	F10=Actions	F12=Cancel		

Figure 182. Batch ISPD TLC Compile Panel (ISPCP01)Screen 3

Batch ISPD TLC Compile (Option 5.18)

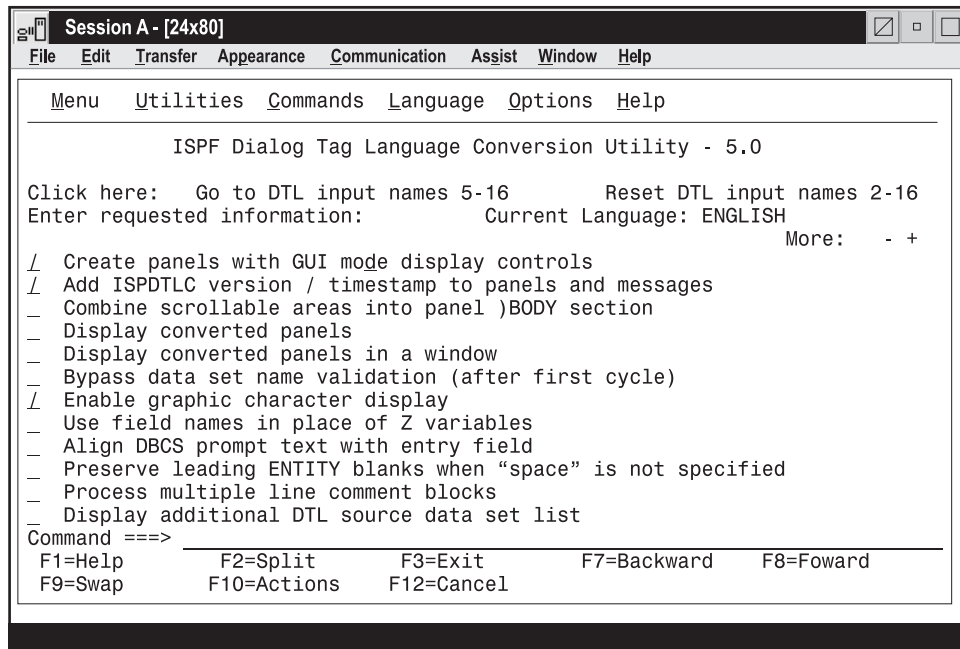


Figure 183. Batch ISPD TLC Compile Panel (ISPCP01)Screen 4

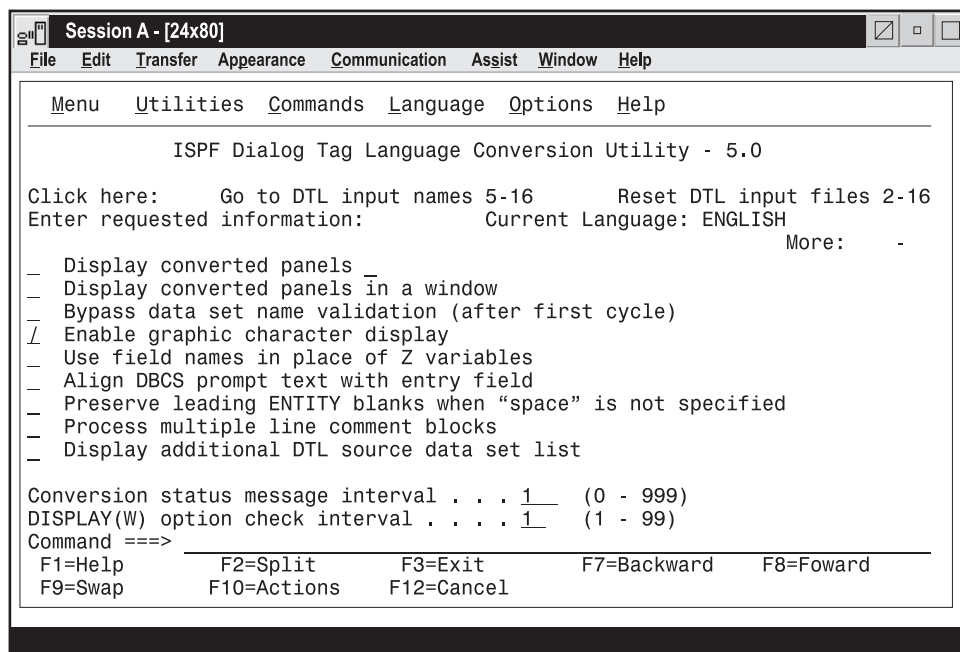


Figure 184. Batch ISPD TLC Compile Panel (ISPCP01)Screen 5

C/C++ for MVS/ESA Compile (Option 5.19)

ISPF supports the C/C++ for MVS/ESA compiler and its tools through dialogs supplied with the C/C++ for MVS/ESA compiler (5655-121). Refer to the *C/MVS User's Guide* and the *C++/MVS User's Guide* for additional information.

Batch C/C++ for MVS/ESA (Option 5.19)

If ISPF cannot access the C/C++ for MVS/ESA compiler, it displays the panel shown in Figure 185.

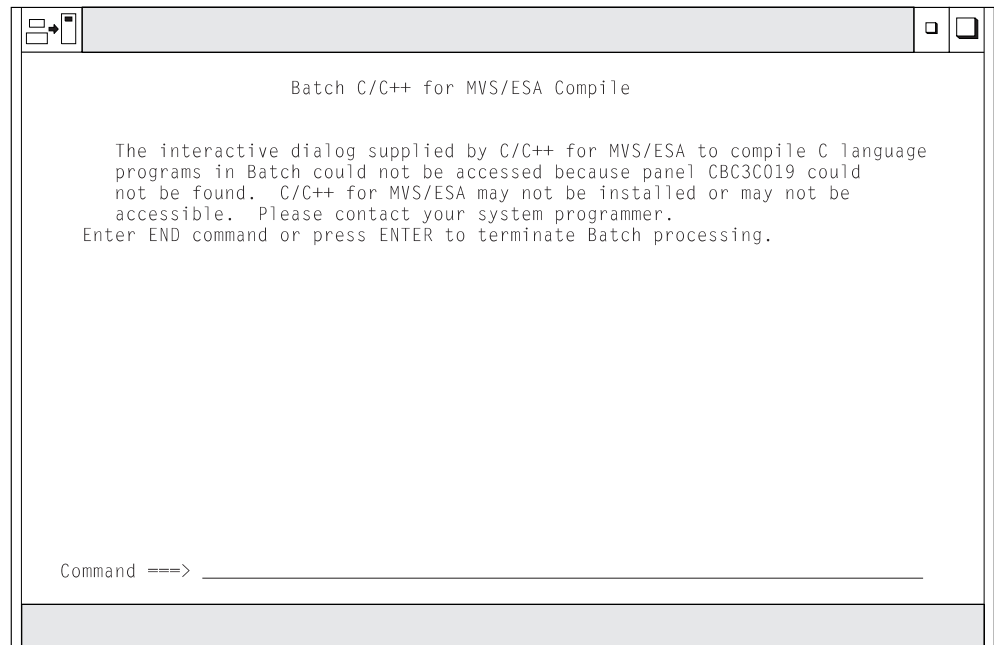


Figure 185. C/C++ for MVS/ESA Information Panel (ISRJP19)

z/OS C/C++ Compile (Option 5.20)

ISPF supports the /OS C/C++ compiler and its tools through dialogs supplied with the z/OS C/C++ compiler (5694-A01). For information about z/OS C/C++, refer to the z/OS C/C++ User's Guide.

If ISPF cannot access the z/OS C/C++ compiler, it displays the information panel shown below.

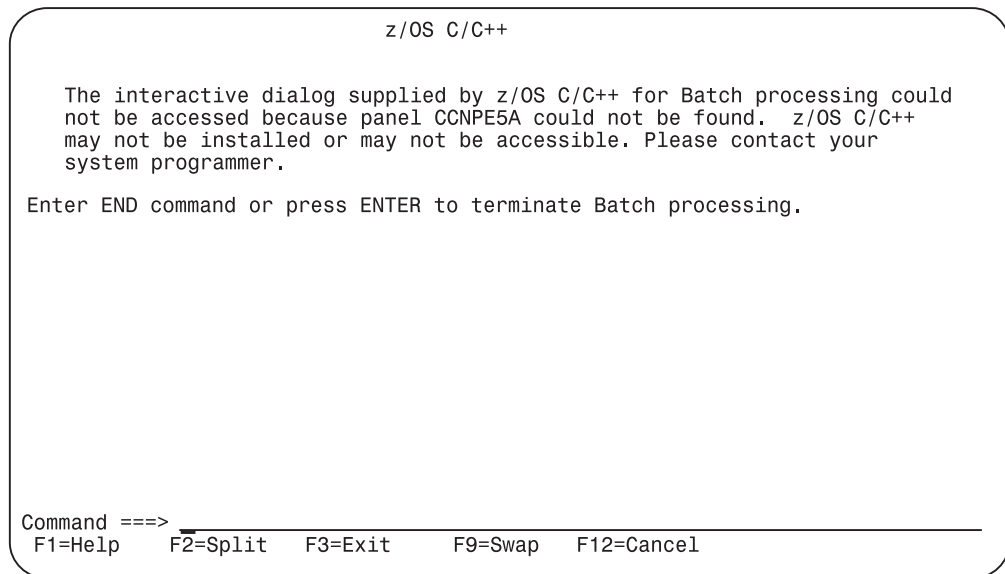


Figure 186. SOMobjects for MVS Information Panel (ISRJP20)

Chapter 7. Command (Option 6)

When you select this option, the ISPF Command Shell panel shown in Figure 187 is displayed. ISPF allows you to enter TSO commands, CLISTs, and REXX EXECs on the Command line of any panel and in the **Line Command** field on data set list displays (option 3.4). However, the ISPF Command Shell panel provides additional capabilities. On this panel, you can enter:

- TSO commands, ISPF commands, CLISTs, and REXX EXECs in a separate, but optional, **ISPF Command** field. This field is displayed only if your installation chooses to do so. The default panel shown in Figure 187 does not display this field. When you use this field, commands that are typed in the TSO Command Entry field (==>) are not blanked out when you enter the SPLIT command to split the screen.

Note: If you use this field, you will not have access to the new function described in “The ISPF Command Shell Panel Saved Command Area” on page 293.

- Session Manager mode, but only if this licensed program is installed. See “Using the Session Manager” on page 294 for more information.
- A long command that continues on the following two lines.

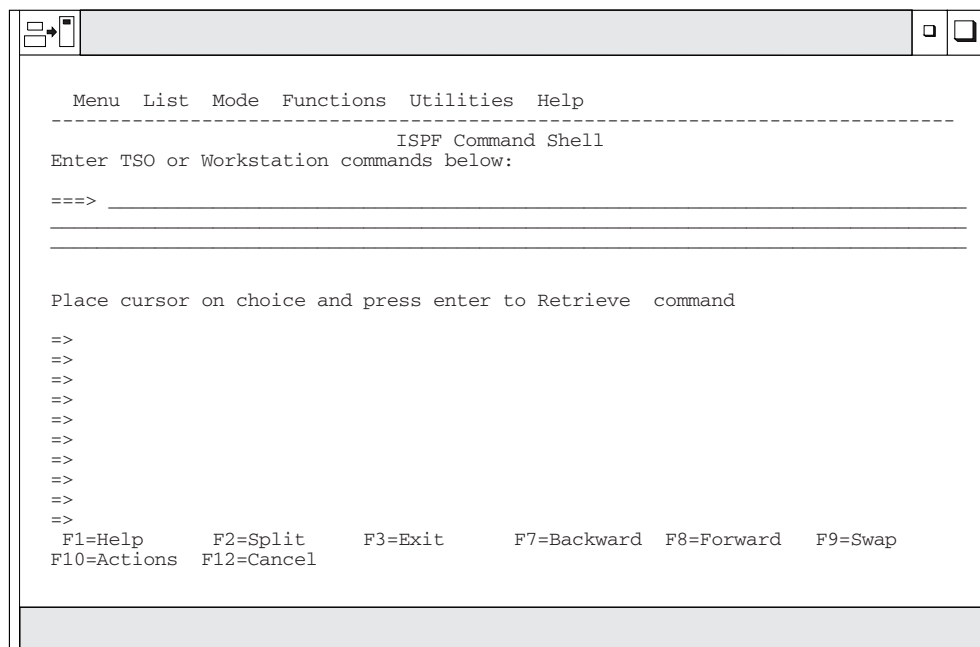


Figure 187. ISPF Command Shell Panel (ISRTSO)

ISPF Command Shell Panel Action Bar

The ISPF Command Shell panel action bar choices function as follows:

Note: The ISPF Command Shell panel action bar contains three pull-down choices that let you control the saved command area.

- List

Command (Option 6)

- Mode
- Functions.

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

List The List pull-down offers you the following choices:

Note: The current setting will be shown as an unavailable choice; that is, it will display in blue (the default) with an asterisk as the first digit of the selection number (if you are running in GUI mode, the choice will be *grayed*).

Update On

Makes the list of commands in the saved command area *live*; that is, new commands are appended to the list automatically.

Update Off

Makes the list of commands in the saved command area *static*; that is, new commands are not appended to the list automatically.

Mode The Mode pull-down offers you the following choices:

Note: The current setting will be shown as an unavailable choice; that is, it will display in blue (the default) with an asterisk as the first digit of the selection number (if you are running in GUI mode, the choice will be *grayed*).

Retrieve

Allows commands to be retrieved from the saved command area and placed on the TSO Command Entry field (==>) so that you can edit them before they are executed. This mode is the default.

Execute

Allows commands to be retrieved from the saved command area and executed in one step.

Delete Allows you to delete commands from the saved command area without executing the commands. Place the cursor on the command to be deleted and press Enter. The command will be blanked out. This process allows you to delete a command if you are running with Update mode set off.

Functions

The Functions pull-down offers you the following choice:

Compress List

Removes duplicate entries and blank spaces in the saved command area if you are running with Update mode set off. Entries are compressed automatically in Update mode.

TSO command

Sets the command shell to route commands to TSO

Workstation command

Sets the command shell to route commands to your workstation.

Notes:

1. Workstation command is available only if you are running the ISPF Client Server.
2. Any command may be prefixed with either TSO or WS to override the command function setting.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help

The Help pull-down offers you the following choices:

- 1 General
- 2 TSO Command processor panel
- 3 Restrictions
- 4 Line I/O mode
- 5 Session Manager mode
- 6 Appendices
- 7 Index

The ISPF Command Shell Panel Saved Command Area

The ISPF Command Shell panel has a saved command area (the bottom portion of the screen) that contains a list of up to 10 commands that you have saved; see Figure 188 for an example. These commands are point-and-shoot fields. What happens when you select a command depends on the mode you specify from the Mode pull-down menu on the action bar.

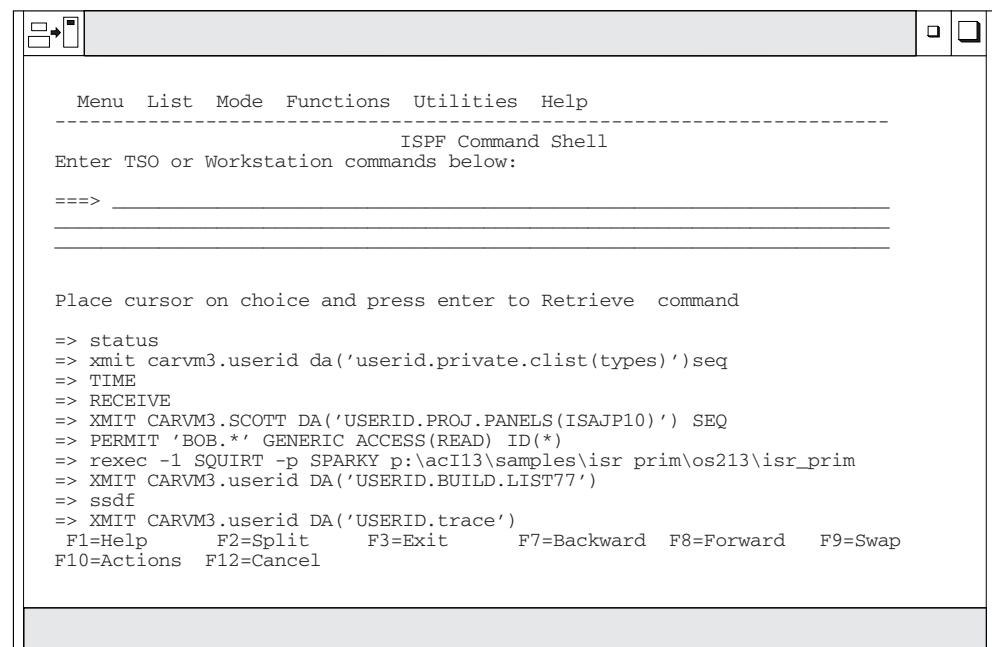


Figure 188. ISPF Command Shell Panel with Saved Commands (ISRTSO)

Entering TSO Commands, CLISTs, and REXX EXECs

You do not need to enter TSO before the command on this panel as you do on other panels, unless the command exists in both ISPF and TSO and you want to process the TSO command. If you use TSO, your processed command is blanked out when the ISPF Command Shell panel is displayed again.

TSO commands, CLISTs, and REXX EXECs entered are invoked using the ISPF SELECT CMD service. Variable names starting with an ampersand (&) are evaluated by ISPF. If you want the underlying command processor to see the ampersand you must specify 2 ampersands. For example

Command (Option 6)

```
DEF NONVSAM(NAME('MY.DATASET') DEVT(0000) VOLUME(&&SYSR2))
```

.

For example, the HELP, PRINT, and CANCEL commands are interpreted as the ISPF HELP, PRINT, and CANCEL commands, unless you precede them with TSO. Therefore, to get TSO HELP information, enter:

```
====> TSO HELP xxx
```

Rules for Entering TSO Commands

Do not enter the following commands under ISPF:

- LOGON and LOGOFF
- ISPF, PDF, or ISPSTART
- TEST
- Commands that are restricted by TSO or ISPF
- Commands that call a program authorized by the Authorized Program Facility (APF), except for the TSO CALL command
- ISPEXEC service calls.

Rules for Entering CLISTs and REXX EXECs

You can enter a CLIST name or REXX EXEC name on this panel, but the following restrictions apply:

- The CLIST or REXX EXEC cannot call the restricted commands shown in the preceding list. However, this does not apply to ISPEXEC, which can be called in a CLIST or REXX EXEC.
- CLIST error exits are not entered for ABENDs.
- CLIST TERMIN command procedure statements may cause unwanted results.

Note: Remember that a command issued through an alias may contain some of the characteristics listed here and thus may cause unwanted results.

Using the Session Manager

If the Session Manager licensed program is installed and available, you can use it by selecting Session Manager mode on the ISPF Settings panel.

Note: Refer to *ISPF Planning and Customizing* for information on altering the PDF configuration table to allow you to enter Session Manager mode.

If you select this option, any display output is displayed in the Session Manager TSOOUT stream.

Note: If GDDM/ISPF mode is active, Session Manager does not get control of the screen. GDDM/ISPF mode is started when a GRINIT service has been issued, but a GRTERM service has not been issued. Refer to *ISPF Services Guide* for more information about these two services.

The function key definitions are not transferred to the Session Manager from ISPF. When the command ends, the Session Manager prompts you to enter a null line to return to ISPF control and displays the TSO Command Processor panel again when you do so.

Command (Option 6)

If you do not select Session Manager mode, terminal I/O occurs as though the Session Manager were not installed. The terminal operates in normal TSO fashion. Any communication with the command is in line-I/O mode. When the command ends, three asterisks (***) are displayed. Press Enter to display the TSO Command Processor panel again in full screen mode.

To interrupt a TSO command, CLIST, or REXX EXEC, press the PA1 key. The TSO command ends and the TSO Command Processor panel is displayed again. If terminal input is inhibited, press the Reset key before pressing the PA1 key. If you are in Session Manager mode, enter a null line to return to ISPF full screen mode.

When the TSO Command Processor panel is displayed again, the command that was just processed is displayed to the right of the arrow. Enter another command or the END command to return to the ISPF Primary Option Menu.

For terminals with primary and alternate screen sizes, ISPF does not check to make sure the same screen settings are in effect when a command, CLIST, or REXX EXEC ends. If you call a CLIST, REXX EXEC, or command that changes the screen settings, you are responsible for saving and restoring them before control is returned to ISPF.

Chapter 8. Dialog Test (Option 7)

This chapter describes Dialog Test, option 7 on the ISPF Primary Option Menu.

Dialog Test (option 7) provides you with facilities for testing both complete ISPF applications and ISPF dialog parts, including functions, panels, variables, messages, tables, and skeletons. The Dialog Test option allows you to:

- Call selection panels, command procedures, and programs
- Display panels
- Add new variables and change variable values
- Display a table's structure and status
- Display, add, modify, and delete table rows
- Browse the ISPF log
- Process dialog services
- Add, modify, and delete function and variable trace definitions
- Add, modify, and delete breakpoint definitions.

You can use TSO TEST to complement this option if you want to examine and manipulate non-ISPF storage areas.

You usually test a dialog in one of two ways:

- Test individual dialog parts, including panels, skeletons, and messages, without calling a function or a selection panel. Eventually, you end your test session by entering the END command on the Dialog Test Primary Option Panel.
- Test dialog functions, including programs, commands, and selection panels, using the Functions option (7.1). You can define traces and breakpoints before calling the function.

Any requested traces for variable usage and dialog service calls are written to the ISPF log. You can browse the log using the Log option (7.5).

If you define a breakpoint and the function gets to it, dialog processing is suspended, and Dialog Test displays the Breakpoint Primary Option Panel (Figure 211 on page 342). At this point, you can access and manipulate dialog parts, such as variables, tables, and so forth. Then, if you select the Go option from the Breakpoint Primary Option Panel, the dialog resumes processing.

When the processing is complete, you are returned to the Functions option (7.1). If you select the Cancel option from the Breakpoint Primary Option Panel, the dialog is cancelled and the first primary option panel that you were shown during your terminal session is displayed again. For example, if the first screen displayed when you began your session was a master application panel that is different from the ISPF Primary Option Menu, that master application panel is displayed again.

The Dialog Test Environment

The Dialog Test Primary Option Panel, shown in Figure 189 on page 298, follows the conventions for a primary option panel. If you use the RETURN command from one of the selected Dialog Test options, the Dialog Test Primary Option Panel is displayed again. If you use the END command from this panel, you return to the ISPF Primary Option Menu.

Dialog Test (Option 7)

When you enter Dialog Test from the ISPF Primary Option Menu, you enter a new user application with an ID of ISR. When you enter Dialog Test from the ISPF primary option panel, you enter a new user application with an ID of ISP. All options listed on the Dialog Test Primary Option Panel operate in this context. If you call a new function using the Functions options (7.1), a SELECT service call is performed, and the rules for the SELECT service are followed.

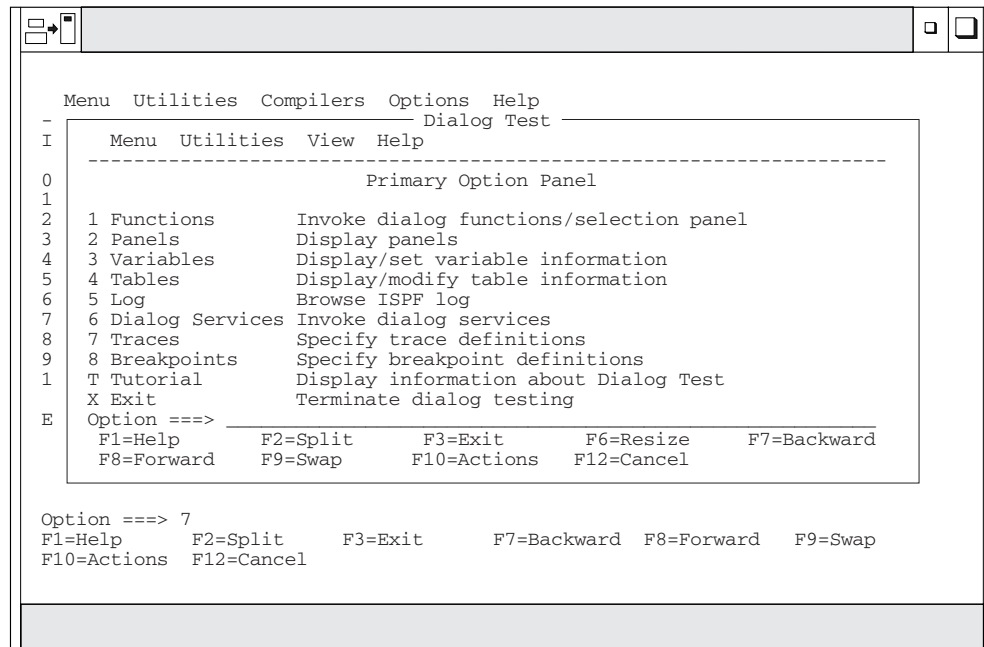


Figure 189. Dialog Test Primary Option Panel (ISPYXD1)

Note: You can set the application ID under which you enter the Dialog Test function using the Dialog Test appl ID... choice from the Options pull-down on the ISPF Primary Option Menu or using the Dialog Test appl ID... choice from the Test pull-down on an Edit panel.

After you begin an application under Dialog Test, you can enter the DTEST command with one of its parameters as a quicker way to start a dialog test function. For example, if you enter **DTEST 8** on the command line, the Option 7.8 Breakpoints panel appears. The other parameters of the DTEST command also match the dialog test function they perform:

- 1 invoke Functions panel
- 2 invoke Display Panel panel
- 3 invoke Variables panel
- 4 invoke Tables panel
- 5 display browse log panel
- 6 invoke Dialog Services panel
- 7 invoke Traces selection panel
- 8 invoke Breakpoint panel

You must use a parameter with the DTEST command, otherwise an error message appears. After you complete the entries on whichever dialog test panel you invoke, leaving the panel returns you to the application you were running with the new entries in place.

Dialog Test is itself a dialog and, therefore, uses dialog variables. Since it is important to allow your dialog to operate without interference, as though in a production environment, Dialog Test accesses and updates variables independently of your dialog variables.

All breakpoints and traces that you set in Dialog Test exist only while you remain within the Dialog Test option.

You should always allocate the ISPF log when using Dialog Test. Do not suppress its generation by typing 0 in the **Primary pages** field that appears on the Log Data set defaults... and List Data set defaults... choices from the Log/List pull-down on the ISPF Settings panel. Dialog Test writes trace data to the log when you request it. Also, if Dialog Test finds an unexpected condition, it writes problem data to the log.

When you enter Dialog Test, you are given the following ISPF facilities:

- All functions you normally get by specifying the TEST parameter on the ISPSTART command
- The logging of all severe errors, both from user dialogs and Dialog Test. This is normally done when you specify TRACE or TRACEX on the ISPSTART command.
- The suspension of the logging of all ISPEXEC dialog service requests. Such logging normally occurs when you specify TRACE or TRACEX on the ISPSTART command. You should use the Traces option (7.7).

These facilities become active for all logical screens when you are using split-screen mode. At the completion of the last dialog test session (dialog test is no longer active in any logical screen), these options will be restored to the original values established during dialog manager start-up. Optionally, by making the appropriate selection on the ISPF Settings panel, the facilities established by dialog test will remain in effect after the last dialog test session terminates.

Dialog Test Primary Option Panel Action Bar

The Dialog Test Primary Option Panel action bar choices function as follows:

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Menu pull-down.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

View Allows you to select whether or not the Add row, Modify row, and Display row panels are displayed in pop-up windows and whether or not Dialog Services (option 7.6) are displayed in a pop-up. By displaying the panel in a pop-up window, you can see the panel underneath and move the window. By displaying the panel as a full-screen display, you can see more data. The setting you choose will remain until you change it.

Help The Help pull-down offers you the following choices:

- 1 General Dialog Test

Dialog Test (Option 7)

2	General Information
3	Functions
4	Panels
5	Variables
6	Tables
7	Log
8	Dialog Services
9	Traces
10	Breakpoints
11	View Action Bar
12	Exit

Using Variables

When you select the Dialog Test option from the ISPF Primary Option Menu, you are given a new function pool, a new shared pool, and the profile pool for the application ID under which you entered Dialog Test. When you select Dialog Test from the ISPF Primary Option Menu, you are given a new function pool, a new shared pool, and the ISPPROF profile pool. These pools are used if you set a variable, display a panel, call an ISPF service, and so forth. When you call a new dialog, Dialog Test uses the SELECT service, and follows the rules for the creation of new variable pools. For example, if you call a new dialog using the NEWPOOL option, Dialog Test creates new shared and function variable pools for you. The profile variable pool, ISRPROF or ISPPROF, remains as it was.

If you set a dialog variable in the shared pool from a dialog running under Dialog Test and then call the dialog again from the Command line, you cannot retrieve the value of that variable.

Dialog variables should be initialized and set in the context of the dialog's processing. A dialog's function variable pools are created when it is called; that is, when the SELECT is done. Therefore, to set function variables in newly created pools, you must define a breakpoint early in your dialog's processing, at a point before the function is called.

For example, if you call a dialog with the NEWPOOL parameter, you must define a breakpoint in the dialog before the first function is called to access that dialog's function and shared variable pools. You can change the dialog's profile variable pool before calling the dialog, since a new profile variable pool is not created.

When your dialog ends, all variable pools that were created when the dialog was called are deleted.

Note: ISPF does not support TSO global variables. You can find a severe dialog test error when testing a dialog that refers to a global variable.

Severe Error Handling

If your dialog finds a severe error when it calls a dialog service, the error is handled as requested by the dialog. The current CONTROL service ERRORS setting, CANCEL or RETURN, determines what is done. If CANCEL is in effect, you can choose whether to continue dialog testing when the Error Message panel is displayed.

Note: If you choose not to continue dialog testing, you return to the ISPF Primary Option Menu. The TEST and TRACE options set by dialog test are restored

to the values originally established during dialog manager start-up. Optionally, by making the appropriate selection on the ISPF Settings panel, the facilities established by dialog test will remain in effect after the last dialog test session terminates.

If you find a severe error when manipulating your dialog at a breakpoint, Dialog Test assumes that the CONTROL service ERRORS setting is CANCEL. For example, if you display a panel at a breakpoint and that panel is not found, the Error Message panel is displayed. This occurs even if your current dialog has an ERRORS setting of RETURN.

Regardless of the ERRORS setting, all your severe errors are logged.

If Dialog Test finds a severe error during its processing, the details are logged and the following message is shown to you on an error message display:

Test severe error
Details precede this message in the ISPF log

Dialog Test errors can occur because:

- Proper ISPF libraries are not being used.
- A programming problem has been found.
- You have attempted to process Dialog Test.
- You have called a Dialog Test option without being in test mode or without calling Dialog Test first.

You should browse the ISPF log to find the problem; see “Log (Option 7.5)” on page 328 for more information.

Commands

You can enter ISPF primary commands on Dialog Test panels. Seven commands have special meaning during Dialog Test operations. You enter them in the Command line of the applicable Dialog Test option panel. These commands, and the Dialog Test options with which they function, are:

Primary Command	Valid Options
CANCEL	<ul style="list-style-type: none"> • Variables (option 7.3) • Tables (option 7.4)¹ • Traces (option 7.7)² • Breakpoints (option 7.8)
END	<ul style="list-style-type: none"> • Variables (option 7.3) • Tables (option 7.4)³ • Traces (option 7.7)² • Breakpoints (option 7.8)
LOCATE	

1. Valid only with Tables options 3 and 4.

2. Valid only with Traces options 1 and 2.

3. Valid only with Tables options 1, 3, and 4.

Dialog Test (Option 7)

		• Variables (option 7.3)
		• Tables (option 7.4) ⁴
		• Traces (option 7.7) ²
		• Breakpoints (option 7.8)
	NEXT/PREV	
		• Tables (option 7.4) ⁴
	QUAL	
		• Breakpoints (option 7.8)
	RESUME	
		• Breakpoints (option 7.8)
	SORT	
		• Variable (option 7.3)

Dialog Test has three line commands that have special meaning during testing operations. These commands, and the options with which they function, are:

Line Command

Valid Options

D (delete)

- Variables (option 7.3)
- Tables (option 7.4) ¹
- Traces (option 7.7) ²
- Breakpoints (option 7.8)

I (insert)

- Variables (option 7.3)
- Tables (option 7.4) ¹
- Traces (option 7.7) ²
- Breakpoints (option 7.8)

R (repeat)

- Tables (option 7.4) ¹
- Traces (option 7.7) ²
- Breakpoints (option 7.8)

When using the Dialog Test primary and line commands, you should be aware of the following:

- You can specify both a primary command and line commands before you press the Enter key.
- You can enter multiple line commands on the display.
- You cannot carry out a deletion if one of the included lines contains another line command.
- You can delete lines that contain an input error.
- The line commands are processed in row order when you press the Enter key. Any fields changed in the row are handled before a line command is processed.
- A primary command is handled after processing for all line commands is complete.

4. Valid only with Tables options 1 and 3.

- As in the ISPF editor, you can specify a number with each line command to denote repetitive operation, unless you are using the Variables option (7.3). To avoid conflict with the I (insert) line command, the Variables option does not allow you to type a number along with the D command to delete more than one line simultaneously. Therefore, enter a single D line command on each line you want to delete. Unlike the ISPF editor, the Variables option does not support block deletes; however, you can enter this command on more than one line before pressing the Enter key.

Ending the Current Option without Saving Changes

The CANCEL command ends the current option. Any changes made to the data are ignored.

Saving Changes

The END command ends the current option. Any changes made to the data now take effect.

Finding a Character String

The LOCATE command searches for a character string and positions a scrollable display to the next row that contains the string. The scan starts at the end of the first row currently being displayed. A message is displayed indicating the result of the scan.

LOCATE *string*

where:

string

The character string you are trying to find. If the string ends in an asterisk (*), a scan for the characters preceding the asterisk is done. The asterisk is optional in the Variables option (option 7.3).

Displaying Breakpoint Qualification Data

The QUAL command can only be entered from the Breakpoints pop-up window. It displays the breakpoint qualification data.

The same breakpoint qualification data can be obtained using the Qualifications... choice on the Qualify pull-down.

Restoring the Format of the Breakpoints Panel

The RESUME command is entered on the Breakpoints panel when qualification parameter values are shown. It restores the format of the Breakpoints panel. Each breakpoint that has qualification is flagged by the characters *QUAL* in columns 75 to 80 on that line of the Breakpoints panel.

Dialog Test Line Commands

The following line commands have special meaning during testing operations:

D – Deleting Lines

The D command deletes one line or *n* lines starting with this line. The syntax is:
D[*n*]

If you are using the Variables option (7.3), the *n* operand does not apply. To avoid conflict with the I (insert) line command, the Variables option does not allow you

Dialog Test (Option 7)

to type a number along with the D command to delete more than one line simultaneously. Therefore, enter a single D line command on each line you want to delete. You can enter this command on more than one line before pressing the Enter key.

I – Inserting Lines

The I command inserts one line or *n* lines directly after this line, with underscores and quotation marks in the appropriate fields. The syntax is:

I[*n*]

R – Repeating Lines

The R command repeats this line once or *n* times. The syntax is:

R[*n*]

Setting a Keylist for Dialog Test

Depending on your needs and preferences, you may wish to set a dialog test-specific keylist to enhance productivity. To modify the default function key settings, go to the Dialog Test Primary Option Panel, type KEYS on the Command line, and press Enter to display the pop-up window shown in Figure 190. Or, you may perform the following steps to display the pop-up:

1. Select Option 0 from the ISPF Primary Option Menu.
2. Select Keylist settings from the Function keys pull-down on the ISPF Settings panel action bar.
3. Use a slash to select the ISPTTEST Keylist; then select Change from the Functions pull-down.

The screenshot shows a terminal window titled "Keylist Utility". Inside, there's a header "File" and a separator line. Below the separator, it says "ISR Keylist ISPTTEST Change" and "Row 1 to 9 of 24". A prompt "Make changes and then select Options action." is followed by a line "Keylist Help Panel Name . . . _____".

Key	Definition	Format	Label
F1 . . .	HELP	SHORT	Help
F2 . . .	SPLIT	LONG	Split
F3 . . .	EXIT	SHORT	Exit
F4 . . .	_____	_____	_____
F5 . . .	_____	_____	_____
F6 . . .	RESIZE	SHORT	Resize
F7 . . .	UP	LONG	Backward
F8 . . .	DOWN	LONG	Forward
F9 . . .	SWAP	LONG	Swap

Below the table, there's a section "Command ==>" with a line "F1=Help F2=Split F3=Exit F7=Backward F8=Forward". Below that, another line shows "F9=Swap F10=Actions F12=Cancel". To the right of this section, there's a "Scroll ==> PAGE" prompt.

Figure 190. Keylist Change Panel (ISPPLUCH)

On the Keylist Change panel, you can reassign existing function keys by typing over the information in the data fields, or create a new function key assignment to suit your needs. For example, you could assign the GO command to F4 if you typically issue GO many times during a dialog test.

If you press F3 or select Save and Exit from the File pull-down, the values that you have assigned will be valid when you return to Dialog Test. If you select Cancel from the File pull-down, the fields return to their original values.

Functions (Option 7.1)

The Functions option (7.1) allows you to test a dialog function without having to build supporting code or panels. Dialog functions include panels, command procedures, and programs. The name of the dialog function and the parameters you can pass are the same as those that you can specify from a dialog function when you call the SELECT service. When you press the Enter key, a SELECT service is called.

If you call a new function or selection panel at a breakpoint, the previous function or selection panel is suspended and the new one is processed. When the new activity finishes, the Invoke Dialog Function/Selection Panel is displayed. The old activity resumes when you enter the END command. When the originally-called function finishes processing, the Invoke Dialog Function/Selection Panel is displayed again.

When you select the Functions option, the scrollable panel shown in Figure 191 is displayed to allow you to specify the dialog function that you want to test. Press F8=Forward to display the rest of the panel.

```

Menu  Utilities  Compilers  Options  Help
Dialog Test
-----
Invoke Dialog Function/Selection Panel      More:  +

Invoke selection panel:
PANEL  . . . _____
OPT    . . . _____

Invoke command:
CMD    . . . DEMO
LANG   . . . _____ (APL, CREX, or blank)
MODE   . . . _____ (LINE, FSCR, or blank)

Invoke program:
PGM    . . . _____
PARM   . . . _____

Command ==>
F1=Help    F2=Split    F3=Exit    F6=Resize    F7=Backward
F8=Forward  F9=Swap      F10=Actions  F12=Cancel

```

Figure 191. Invoke Dialog Function/Selection Panel (ISPYFP)

There are two alternate Invoke Dialog Function/Selection panels, ISPYFPA and ISPYFPB. ISPYFPA is formatted with the most often used fields at the top of the scrollable area. ISPYFPB is similar, but it has a selection field for panel, command, program, or request selection. Unlike panel ISPYFP and ISPYFPA, when you use ISPYFPB the panel, command, program, and request selection fields can all contain values.

Functions (Option 7.1)

You can specify one of the alternate panels using ISPF's Configuration utility. Refer to the *ISPF Planning and Customizing* manual for more information.

One of the advantages of placing dialog panels in pop-up windows is that you can move the pop-up within the 3270 physical display area to reveal portions of the underlying panel.

See *ISPF Dialog Developer's Guide and Reference* for instructions on how to move a pop-up window.

Invoke Dialog Function/Selection Panel Action Bar

The Invoke Dialog Function/Selection Panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
Save	Allows you to specify that you want to save or clear input field information when you exit this panel.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers you the following choices: <ol style="list-style-type: none">1 General2 Invoke Function Panel3 Usage Notes4 General Dialog Test

Invoke Dialog Panel Fields

To call a function, you must specify a value for either the PANEL, CMD, or PGM field. You cannot specify more than one of these fields.

The fields on the Invoke Dialog Function/Selection Panel function as follows:

Invoke selection panel:

Use the following fields to call a selection panel:

PANEL

The name of the selection panel to be displayed.

OPT An optional parameter indicating the first selection option that must be valid from the specified selection panel. This input field continues onto the next line on the panel.

Invoke command:

Use the following fields to call a command:

CMD The name of a command procedure written in CLIST or REXX, or any TSO command, to be called as a dialog function. You can include command parameters.

Use the percent sign (%) as a prefix symbol to tell ISPF to remove the Invoke Dialog Function/Selection Panel and use the full screen to display the results of a CLIST or REXX EXEC call. A complete CLIST or REXX EXEC call is indicated by three asterisks. Press the Enter key to return to the Invoke Dialog Function/Selection Panel.

If you omit the % prefix, ISPF interprets the command as a TSO command, using line mode to display the command results at the bottom of the Invoke Dialog Function/Selection Panel.

LANG

An optional parameter used to specify **APL** or **CREX**.

Type **APL** in this field to specify the use of the APL language. If this is your first APL request during the session, the command specified in the CMD keyword is called and an APL2 environment is established. If this is not your first APL request during this session, the string specified after the CMD keyword is passed to the APL2 workspace and processed.

Type **CREX** in this field to specify that the command specified in the CMD keyword is a REXX EXEC that has been compiled and link-edited into a load module, and that a CLIST/REXX function pool is to be used rather than an ISPF module function pool.

See *ISPF Dialog Developer's Guide and Reference* for further information about Compiled REXX processing.

To specify any language other than APL or Compiled REXX, leave this field blank.

MODE

An optional parameter that overrides:

- Automatic line mode entry, caused when a TSO command is entered.
- Automatic full-screen display caused by the % CLIST or REXX EXEC prefix. However, it does not prevent ISPF from calling the command as a CLIST or REXX EXEC.

If you leave this field blank, the % prefix has its normal effect. The valid values for this field are:

LINE Used to enter line mode when calling a CLIST or REXX EXEC.

FSCR Used to enter full-screen mode when calling a TSO command.

Invoke program:

Use the following fields to call a program:

PGM The name of a program to be called as a dialog function.

PARM Optional parameters to be passed to the program. This input field continues onto the next line on the panel.

MODE

An optional parameter used to tell ISPF whether to display the program results in line mode or full-screen mode. If you leave this field blank, ISPF uses line mode as the default. The valid values for this field are:

LINE Used to enter line mode when calling a program. Results of the program are displayed at the bottom of the Invoke Dialog Function/Selection Panel.

FSCR Used to enter full-screen mode when calling a program. ISPF removes the Invoke Dialog Function/Selection Panel

Functions (Option 7.1)

and uses the full screen to display the program results. Three asterisks show program completion. Press the Enter key to return to the Invoke Dialog Function/Selection Panel.

Invoke request:

Use the following field to call a workstation command:

WSCMD

A fully qualified workstation command with any of its parameters.

Options:

Use a slash to select the following options:

- | | |
|----------------|--|
| NEWAPPL | Indication of whether a new application is being called. Select this option if the function is a new application. |
| ID | A one- to four-character ID for a new application. If you call a new application and leave the ID field blank, the default ID of ISP is used. Note that the ID determines the names of the profile and the command table to be used for the application. |
| NEWPOOL | Indication of whether a new shared variable pool is to be created. Select this option if you want to create a new shared variable pool; however, the selection is ignored if NEWAPPL is selected. |
| PASSLIB | Shows that the current set of application-level ISPF libraries, if any sets exist, is to be used by the application being selected. You can select PASSLIB only if you also select NEWAPPL. |

Note: For more information about the PASSLIB field, see the description of the SELECT service in *ISPF Services Guide*

Panels (Option 7.2)

When you are developing panels, you can use the Panels option (7.2) to test newly created or changed panels and messages without having to build supporting code to display them. Any variables referred to and set during panel processing are written to the current function variable pool.

When you select the Panels option (7.2), the panel in Figure 192 on page 309 is displayed.

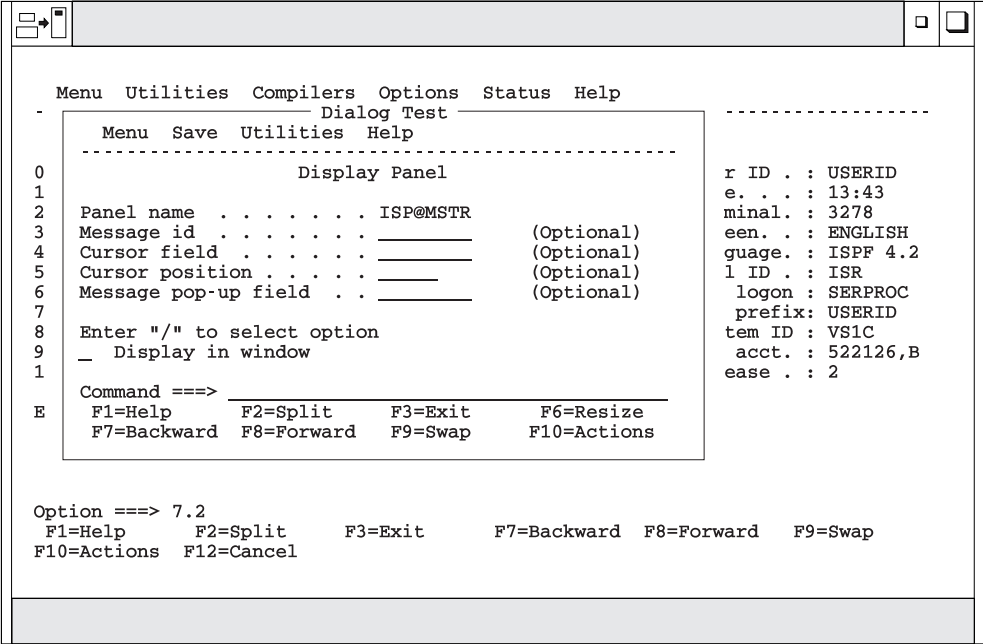


Figure 192. Display Panel (ISPYP1)

Display Panel Action Bar

The Display Panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
Save	Allows you to specify that you want to save or clear input field information when you exit this panel.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers you the following choices: <ol style="list-style-type: none">1 General2 Display Panel3 Usage Notes4 General Dialog Test

Display Panel Fields

The fields on the Display Panel function as follows:

Panel name	The name of the panel to be displayed.
Message id	The identifier of a message to be displayed on the panel.

Panels (Option 7.2)

Cursor field

The name of the field on the panel where the cursor is to be positioned.

Cursor position

An integer specifying the position in the field where the cursor is to be placed.

Message pop-up field

The name of a panel field the pop-up message window should be placed adjacent to. Note that the message definition determines if the message will appear in a pop-up window.

Display in window

A slash (/) specifies that the panel is to be displayed in a pop-up window.

If you specify a panel name, entries in **Message id**, **Cursor field**, **Cursor Position**, **Message pop-up field**, and the Display in window option are optional.

With the exception of the Display in window option, these are the same parameters that a dialog function can specify when calling the DISPLAY service. Selecting the Display in window field is the functional equivalent to the dialog issuing an ADDPOP service prior to the DISPLAY service.

When the panel is displayed, the)INIT and)PROC sections of the panel are processed in the same way the DISPLAY service would process them.

If you want to set variables before you display the panel, you can use the Variables option (7.3) to do so. When you display the panel, you can type in new data or type over existing data, and then verify the variables by using the Variables option (7.3) again. Data that you type on the panel is retained until you change it, leave Dialog Test, or reset the function pool.

Figure 193 on page 311 shows the panel that is displayed if you specify message ID ISPD241 and, optionally, a cursor position without identifying a panel name. The long message portion of the identified message is displayed when you enter the HELP command on that panel.

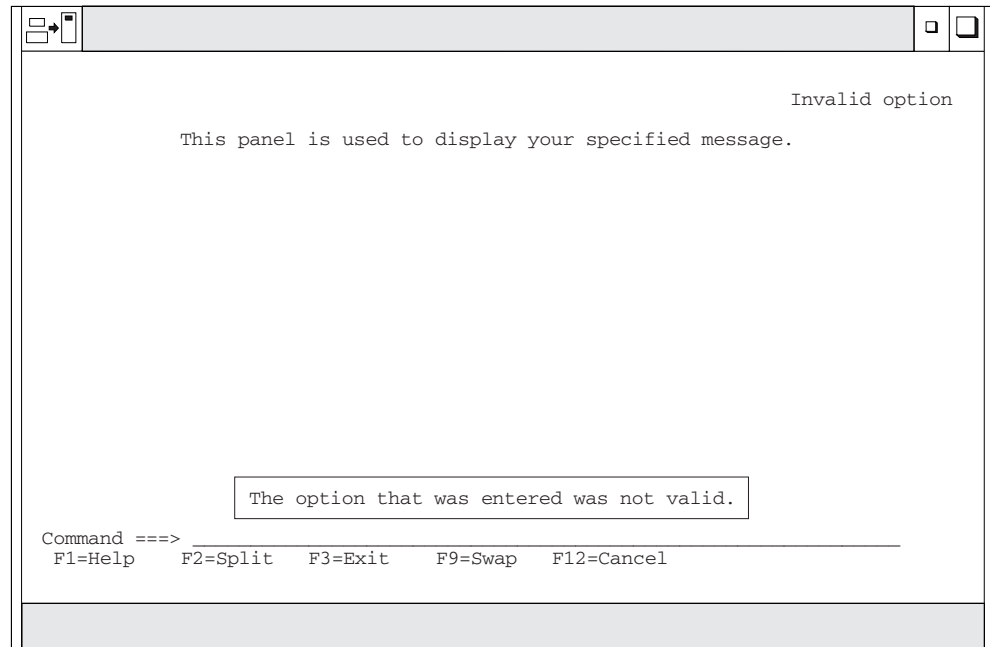


Figure 193. Message Display Panel (ISPYP2)

When you enter the END command from the panel being tested, the Display Panel reappears on the screen.

Variables (Option 7.3)

The Variables option (7.3) allows you to:

- Display all the ISPF variables defined in the dialog application you are testing.
- Change the value of a variable by typing over it, unless the variable has an N (non-modifiable) attribute.
- Define new variables by inserting lines or by changing the name or pool of a listed variable.
- Delete variable names and blank lines.

When you select this option, you can scroll a display showing all the current variables for the dialog being tested, as shown in Figure 194 on page 312.

In addition to scrolling capability, you can also increase the size of the Variables pop-up window to fill the entire 3270 physical display area using the RESIZE command. The initial RESIZE command increases the pop-up window to its maximum size, and the following RESIZE reduces the window to its original size.

Variables (Option 7.3)

Menu Utilities Help

Variables Row 1 to 10 of 722

Add, delete, and change variables. Underscores need not be blanked.
Enter END command to finalize changes, CANCEL command to end without changes.

Application . : ISR

Variable	P	A	Value
.... ZCMD	I	-	_____
.... ZCURFLD	I	-	_____
.... ZCURPOS	I	-	0001
.... ZPARM	I	-	_____
.... ZWINTTL	I	-	Message Display Panel
.... Z	S	N	_____
.... ZACCTNUM	S	N	522126
.... ZAPLCNT	S	N	0000
.... ZAPPLID	S	N	ISR
.... ZCOLORS	S	N	0007

Command ==> _____ Scroll ==> PAGE

F1=Help F2=Split F3=Exit F6=Resize F7=Backward F8=Forward

F9=Swap F10=Actions F12=Cancel

Figure 194. Variables Panel (ISPYVPN)

The Variables display is controlled by the selection you make in the View pull-down on the Dialog Test Primary Option Panel action bar:

- 1 **Display Variables in window.** Variables are displayed in a pop-up window.
- 2 **Display Variables full-screen.** Variables are displayed full-screen.

Note: The current setting will be shown as an unavailable choice; that is, it will display in blue (the default) with an asterisk as the first digit of the selection number (if you are running in GUI mode, the choice will be *grayed*).

Variables Panel Action Bar

The Variables Panel action bar choices function as follows:

Menu

See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help

The Help pull-down offers you the following choices:

- 1 General Variables
- 2 Definitions
- 3 Variables Panel
- 4 Manipulating Variables
- 5 Primary Commands
- 6 Line Commands
- 7 Usage Notes
- 8 General Dialog Test

Variables Panel Fields

Each line of the display represents a variable and contains a line command area ('). The fields on the Variables panel function as follows:

Variable

Name of the variable. The variable name is alphanumeric, with the first character either alphabetic or the special characters \$, #, or @. The variable name cannot exceed eight characters in length. All alphabetic characters are converted to uppercase when you press the Enter key. The Variable field is required.

P Pool that contains the variable; a required one-character field, where:

V Function pool; the variable was defined with the VDEFINE service.

I Function pool; a variable that was created by a CLIST or REXX EXEC, or by using the Variables option. This is an *implicit* variable, which was not explicitly defined by using the VDEFINE service.

S Shared variable pool.

P Profile variable pool.

A Attributes of the variable, a non-modifiable one-character field, where:

N Non-modifiable variable. Some system-reserved variables are not modifiable.

T Truncated variable value. The actual value is longer than the 58 characters that you can display on the panel.

If you change a line showing a truncated value, only the data shown on the display is stored as the new value.

Value Value of the variable. The value can be up to 58 characters in length.

Variables Commands

The Variables option (7.3) uses the CANCEL, END, and LOCATE commands, and the I (insert) and D (delete) Dialog Test line commands described in "Commands" on page 301. You can change the displayed sort order using the SORT command. SORT SORT with no operands sorts the list by variable pools then by variable name. SORT NAME sorts the list by variable name and then by variable pool. SORT VALUE sorts the list by the displayed Value field. The LOCATE command can be used to search for a specific variable. LOCATE accepts as an operand the name, or first letters of the name of a variable. If the name is not found, the list is positioned near the closest match. You can use the RFIND key to continue searching other variable pools.

Normally, the variable pools are updated with the data from the display when you use the END command to leave the option.

Manipulating Variables

The rows of the display are sorted in the following order:

1. By pool (function, then shared, then profile)
2. By function pool type (V, then I)
3. Alphabetically by variable name within each pool.

Insertions are left where they are typed on the display. Changes to the display are processed when you press the Enter key. Updating of the variable pools occurs when you enter the END command.

Variables (Option 7.3)

Creating New Variables

You can create new dialog variables, but you cannot create two variables with the same name in the same variable pool.

To create a new variable, you can do one of two things:

- Use the I line command to insert a new row, and then type the variable name, pool, and value on the new line. For each field, move the cursor to the start of the field and type new information. The underscores are pad characters; you do not need to blank them out.
- Type over the name of an existing variable, its pool indicator, or both. This creates a new variable and resets the old variable's value to nulls.

If you change a truncated value, the portion that is not displayed is lost. The new variable value consists only of the visible portion on the screen.

New function pool variables are given an I (implicit) attribute and a CHAR format. If you type F in the attribute field, ISPF changes it to I.

By using the second method, you can interchange the values of two or more variables by simply changing their names. For example, you can interchange the values for variables A and B by changing the variable name A to B and name B to A, and then pressing the Enter key.

Deleting Variables

Any dialog variable in the shared and profile pools can be deleted, unless it has an N attribute. Though you cannot delete a variable from the function pool, you can set its value to blanks.

To delete a variable, use the D line command. However, to avoid conflict with the I (insert) line command, the Variables option does not allow you to type a number along with the D command to delete more than one line simultaneously. Therefore, enter a single D line command on each line you want to delete. You can type this command on more than one line before pressing the Enter key.

Variables Usage Notes

When using the Variables option (7.3), you should be aware of the following:

Input errors

Correct any errors before leaving a display. If you cannot correct the errors, use the CANCEL command.

Length and format errors in variables defined with the VDEFINE service are detected when you enter the END command. If ISPF finds such an error, it prompts you to fix the variable value.

Test mode

Variable manipulations carried out under Dialog Test at a breakpoint are considered an extension of your dialog and, as such, are handled in user mode. Dialog variables, table data, and service return codes that you introduce, delete, or change are treated as though your dialog had made those changes.

Variable life

Profile variables that you create remain in your profile pool from one Dialog Test session to another. Shared and function variables exist only for the duration of Dialog Test.

Split-screen mode

In split-screen mode, two logical screens can share a profile variable pool. Since the Variables option (7.3) takes a snapshot of the variables, any change to a profile variable on one screen is not immediately reflected on the other screen. To get the latest changes, select the Variables option (7.3) again. Also, when one profile variable is changed on two logical screens using split-screen mode, the changed profile variable on the screen where the last END command was entered takes precedence.

Variable value

Variables defined with the VDEFINE service as non-character are displayed in converted form. Any changes made to the variable's value should conform to the defined format.

Do not change them using the hexadecimal representation. A format or length error causes a message to be displayed when you use the END command. When a VDEFINE error occurs, a panel identifies the data and its value and describes the error. You must then correct the error and press the Enter key. If you create a new variable by changing the pool indicator of an existing variable defined as non-character, the new variable has character (CHAR) format.

Hexadecimal data

Hexadecimal data that cannot be displayed is converted to displayable characters or typed using the form:

`X'nnnnnnnn'`

where:

n An integer 0 through 9 or an alphabetic character A through F. There must be an even number of characters within the quotation marks.

DBCS data

A variable defined as DBCS by the VDEFINE service or displayed through the field with FORMAT(DBCS) specified in the test environment is displayed using the form:

`'-[DBDBDB]'`

where:

[and] Represent the SO (shift-out) and SI (shift-in) characters, respectively.

If you type a DBCS value in this format on the Variables panel, only the DBCS characters are stored.

Tables (Option 7.4)

The Tables option (7.4) allows you to examine and manipulate the rows of a table, and to display table structure and status. When you select this option, the panel in Figure 195 on page 316 is displayed, on which you show the table function you want and the parameters needed to identify the table.

Tables (Option 7.4)

The screenshot shows the ISPF Tables Panel (ISPYTPI) with the following content:

```
Dialog Test
-----
Menu  Utilities  View  Help
-----
                        Tables
1 Display row          3 Modify row          5 Display structure  More: +
2 Delete row          4 Add row            6 Display status
Table Name . . . . . Open tables . . . . . (NOWRITE or WRITE or blank for no TBOPEN)
Row identification:
By row number . . * . . . . . Current row . : . . . . .
Variable Value (* = current row)
(Search for row if row number blank)
-----
DBCS column specification:
Option ==>
F1=Help      F2=Split    F3=Exit      F6=Resize    F7=Backward
F8=Forward   F9=Swap      F10=Actions  F12=Cancel
```

Figure 195. Tables Panel (ISPYTPI)

Tables Panel Action Bar

The Tables panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
View	Allows you to select whether or not the Add row, Modify row, and Display row panels are displayed in pop-up windows. By displaying the panel in a pop-up window, you can see the panel underneath and move the window. By displaying the panel as a full-screen display, you can see more data. The setting you choose will remain in effect until you change it.
Help	The Help pull-down offers you the following choices: <ul style="list-style-type: none">1 General Tables2 Definitions3 Tables Panel4 Display Row5 Delete Row6 Modify Row7 Add Row8 Display Structure

9	Display Status
10	Usage Notes
11	View Action Bar
12	General Dialog Test

Tables Panel Fields

The fields on the Tables panel function as follows:

Table Name

The name of the table in which you are interested. The table must be open for all, except the Display Status option (6) of the Tables option (7.4). The table can be opened using the Dialog Services option (7.6) or can be opened automatically by specifying the Open tables field WRITE/NOWRITE option.

Open tables

The table must be open for all but the Display Status option (6) of the Tables option (7.4). Specifying WRITE or NOWRITE will cause Tables option to automatically open the table in the respective mode. A blank field directs Tables to bypass the automatic open. If Tables automatically opens the table, it will be closed automatically when the Tables option is terminated. This is done with a TBCLOSE service which will cause any table changes to be preserved if the table were automatically opened with the WRITE option.

This field is ignored if the table has been opened outside of the Tables (7.4) option.

Row identification

Identify a row, either directly by row number or indirectly by specifying table variable names and their values as search operands.

Current row

The position number of the current row after you have identified a table. This field is not modifiable.

By row number

The position number of the table row that you want, or If you are adding a row, you can use:

TOP Makes the new row first in the table.

BOTTOM

Makes the new row last in the table.

Variable

The names of variables whose values are to be used to search the table for a row with matching contents. You insert them by typing over the underscores beneath this heading.

Value The value to be used in the search, up to 58 characters. For an abbreviated search, type the beginning characters followed by an asterisk.

You can specify a DBCS value in the form:

¬[DBDBDB]

where:

[and] Represent the SO (shift-out) and SI (shift-in) characters, respectively. For an abbreviated search, type a two-byte asterisk (*) at the end of the DBCS value. For example:

¬[DBDB**]

Tables (Option 7.4)

where:

****** Represents the two-byte asterisk character.

DBCS column specification

The variable names of the values that are DBCS data. The value of the variable is displayed using the form:

¬[DBDBDB]

If you type a DBCS value in this format on the Modify Row panel or the Add Row panel, only the DBCS characters are stored, regardless of the DBCS column specification.

Option

The number of one of the functions displayed on the Tables panel.

Note: The option names (for example, Display row) are point-and-shoot fields; however, if an option is already specified at the Option prompt, it takes precedence over your point-and-shoot selection.

Once you specify a table name, it is retained until you change it or until you leave Dialog Test.

For the Display row (1), Delete row (2), Modify row (3), and Add row (4) options of the Tables option (7.4), you must identify the row you want to display, delete, modify, or add. To do this, you can specify a row number in the **By row number** field, or you can use the **Variable** and **Value** fields to specify a list of search operands. To show the current row, leave the asterisk in the **By row number** field. If you specify both a row number and a search operand, the row number is used and the search operand is ignored.

The current row pointer in the table can be changed only at your request or by your dialog.

The list of search operands consists of variable names and values that allow you to specify the values that specific variables have in a row. You can specify the complete value, abbreviate the value with an asterisk to find a row containing a variable beginning with specified characters, or leave the row blank. The search begins with the row following the current row. If a row matching the search operand is not found, the current row pointer is set to the top. You can repeat the search, if necessary.

Tables Panel Options

The following sections describe the options at the top of the Tables panel.

1—Display row

You can use the Display row option to display the contents of an existing row in an open table. When you select the Display row option, do the following on the Tables panel:

- Specify the name of a table in the **Table Name** field. If the table is not open, specify NOWRITE or WRITE in the **Open tables** field.
- Specify a row number or a search operand list to identify a row.

Note: Use the View action bar choice on the Tables panel to specify whether this display is to be in a pop-up or full-screen.

When you press Enter, you are shown the table row data on a display that you can scroll (Figure 196). The pop-up window can also be resized using the RESIZE command. In the figure, the variables constitute one table row.

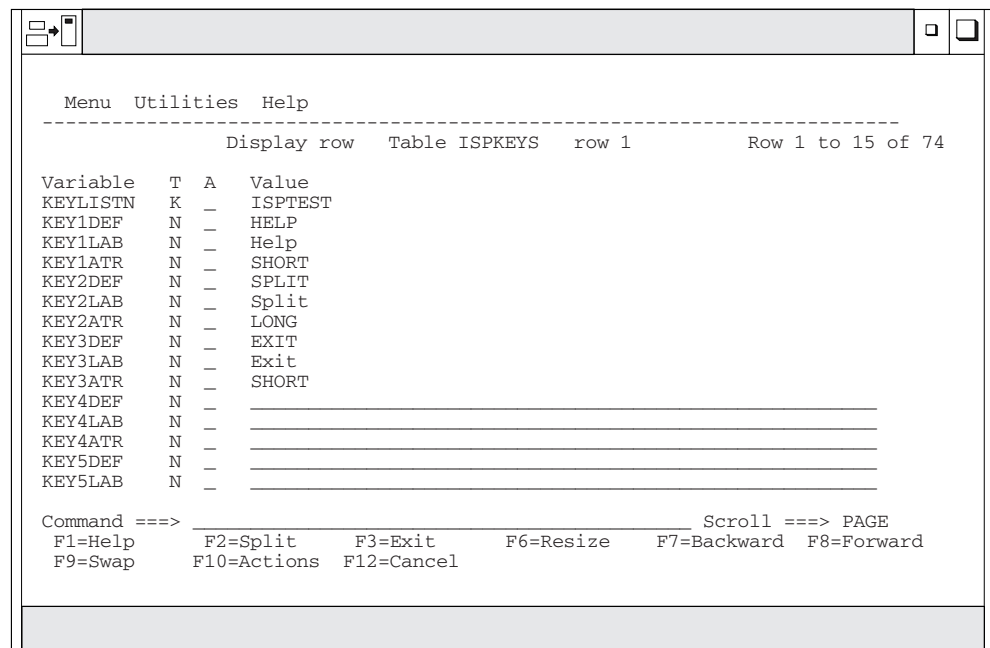


Figure 196. Display Row Panel (ISPYTPD)

Each line on the display shows:

Variable	Variable name
T	Type of variable:
	K Key variable.
	N Name variable; non-key.
	S Save (extension) variable.
A	Attribute of each variable:
	T Truncated to 58 characters for display.
Value	The first 58 characters of the variable value.

Display Row Commands: The Display Row option uses the END and LOCATE commands described in “Commands” on page 301.

2—Delete row

You can use the Delete row option to remove an existing row from an open table. When you select the Delete row option, do the following on the Tables panel:

- Specify the name of a table in the **Table Name** field. If the table is not open, specify NOWRITE or WRITE in the **Open tables** field.
- Specify a row number or a search operand list to identify a row.

When you press Enter, a panel is displayed (Figure 197 on page 320) to allow you to confirm the delete request.

Tables (Option 7.4)

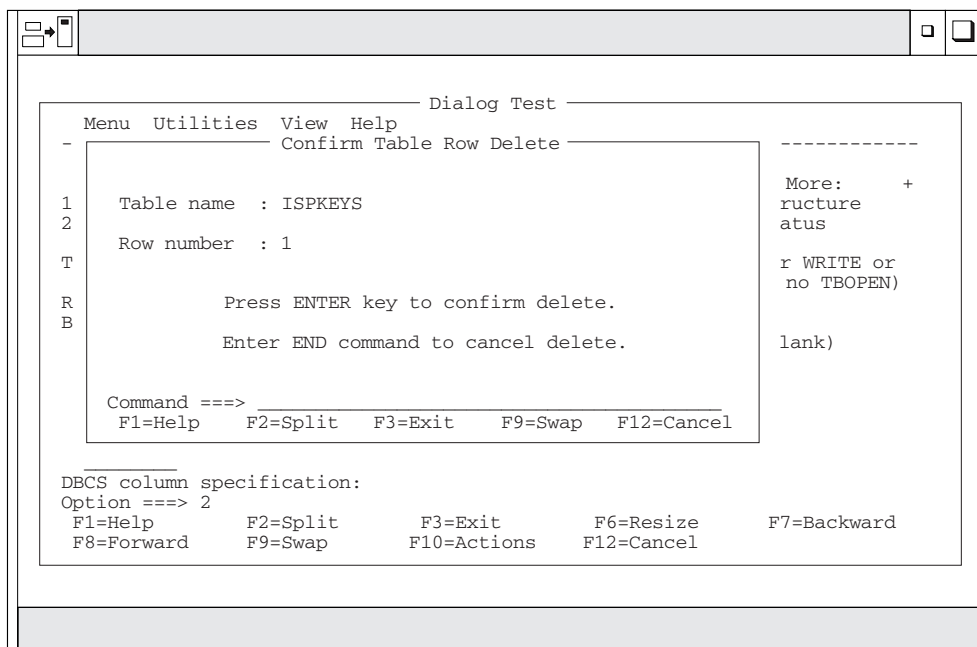


Figure 197. Confirm Table Row Delete Panel (ISPYTPCD)

The fields on the panel are:

Table name

Name of an open table

Row number

Number of the row to be deleted.

Press Enter to delete the row, or enter the END or CANCEL command to cancel the deletion.

3—Modify row

You can use the Modify row option to change the contents of an existing row of an open table. When you select the Modify row option, do the following on the Tables panel:

- Specify the name of a table in the **Table Name** field. If the table is not open, specify NOWRITE or WRITE in the **Open tables** field.
- Specify a row number or a search operand list to identify a row.

Note: Use the View action bar choice on the Tables panel to specify whether this display is to be in a pop-up or full-screen.

When you press Enter, a display that you can scroll (Figure 198 on page 321) is shown. The pop-up window can also be resized using the RESIZE command.

Menu Utilities Help

Modify row Table ISPKEYS row 1 Row 1 to 12 of 74

Modify variable values and savenames. Underscores need not be blanked.
Enter END command to finalize changes.

Variable	T	A	Value
KEYLISTN	K	_	ISPTEST
KEY1DEF	N	_	HELP
KEY1LAB	N	_	Help
KEY1ATR	N	_	SHORT
KEY2DEF	N	_	SPLIT
KEY2LAB	N	_	Split
KEY2ATR	N	_	LONG
KEY3DEF	N	_	EXIT
KEY3LAB	N	_	Exit
KEY3ATR	N	_	SHORT
KEY4DEF	N	_	
KEY4LAB	N	_	

Command ==>

F1=Help	F2=Split	F3=Exit	F6=Resize	F7=Backward	F8=Forward
F9=Swap	F10=Actions	F12=Cancel			

Scroll ==> PAGE

Figure 198. Modify Row Panel (ISPYTPM)

Each line on the panel represents a variable in row 6 of the table and contains a line command area (') and the following fields:

Variable Variable name, modifiable only for save variables.

T Type of variable, non-modifiable:
K Key variable.
N Name variable; non-key.
S Save (extension) variable.

A Attribute of each variable, non-modifiable:
T Truncated to 58 characters for display.

Value Value of the variable up to 58 characters.

Type in new values or change the current values for the key, name, and save variables in the Value column. Enter new save variables by typing over the underscores in the Name column with the variable names and specifying the desired values. The underscores are pad characters; you do not need to blank them out.

When using the Modify row option, be aware of the following:

- If the table has keys, the values for the keys in the added row must be different from those in the existing rows when you leave the Modify row option. Otherwise, a message is displayed and the row is displayed again so you can change the keys.
- If the table was sorted using the TBSORT dialog service and a sort field is modified, the row's position in the table can change to preserve the search order.
- You cannot change the variable name for a key variable or name variable; if you do, an error message is displayed and the original name is restored.
- You cannot delete a key or name variable and its value from the display or table row.

Tables (Option 7.4)

- If you delete a save variable, assume that the variable no longer exists in this row.
- If more than one variable entry has the same name, all instances of that variable are assigned the value of the last occurrence of the variable; that is, the occurrence closest to the bottom of a display that you can scroll.
- Blank save names are ignored and do not need to be deleted, even if data is left in the value.
- Hexadecimal data that usually cannot be displayed is converted to characters that can be displayed or is typed by using the form:

`X'nnnnnnnn'`

where:

- n** An integer 0–9 or an alphabetic character A–F. There must be an even number of characters within the quotation marks.
- Variables defined with the VDEFINE service as non-character are shown in converted form; do not change them by using the hexadecimal representation. A format or length error causes a message to be displayed when you use the END command.
- When you leave the Modify row option by using the END command, the row is replaced, and the message Row modified is issued.

Modify Row Commands: The Modify row option uses the CANCEL, END, and LOCATE commands, and the D (delete), I (insert), and R (repeat) Dialog Test line commands described in “Commands” on page 301. Inserted and repeated lines always have a type of S, because you can add only save variables to a row of an existing table. also, you can delete only save variables.

4—Add row

You can use the Add row option to add a new row after a selected row of an opened table. When you select the Add row option, do the following on the Tables panel:

- Specify the name of a table in the **Table Name** field. If the table is not open, specify NOWRITE or WRITE in the **Open tables** field.
- Specify a row number or a search operand list to identify a row.

Note: Use the View action bar choice on the Tables panel to specify whether this display is to be in a pop-up or full-screen.

Menu Utilities Help

Add row Table ISPKEYS after row 1 Row 1 to 12 of 73

Add variable values and savenames. Underscores need not be blanked.
Enter END command to finalize changes.

Variable	T	A	Value
KEYLISTN	K	-	
KEY1DEF	N	-	
KEY1LAB	N	-	
KEY1ATR	N	-	
KEY2DEF	N	-	
KEY2LAB	N	-	
KEY2ATR	N	-	
KEY3DEF	N	-	
KEY3LAB	N	-	
KEY3ATR	N	-	
KEY4DEF	N	-	
KEY4LAB	N	-	

Command ==> F1=Help F2=Split F3=Exit F6=Resize F7=Backward F8=Forward
F9=Swap F10=Actions F12=Cancel

Scroll ==> PAGE

Figure 199. Add Row Panel (ISPYTPA)

When you press Enter, a display that you can scroll is shown (Figure 199), containing all the key and name variables in the table. The pop-up window can also be resized using the RESIZE command.

Each row of the display contains a line command area (') and the following fields:

Variable Variable name.

T Type of variable, non-modifiable:
K Key variable.
N Name variable; non-key.
S Save (extension) variable.

A Attribute of each variable. This attribute is non-modifiable and is not used for this option.

Value Space for the variable value to be added, up to 58 characters.

Type the values for the key and name variables in the Value column, which is originally initialized to all nulls. You cannot change the names of the key and name variables because they were established when the table was created.

You can enter save variables, identified as TYPE S, by typing over the underscores with the save variable names and specifying the desired values. The underscores are pad characters; you do not need to blank them out.

You can add a row with no values to the table, but you are asked to confirm such an action to guard against inadvertent use of the END command.

When using the Add row option, be aware of the following points:

Tables (Option 7.4)

- The position of the new row in the table depends on whether the table was previously sorted using the TBSORT dialog service. If the table was sorted, the new row is placed in sort order; if it has not been sorted, the new row is placed after the row you specified.
- You cannot delete a key or name variable and its value from the display or table row.
- You cannot change the variable name for a key or name variable; if you do, an error message is displayed and the original name is restored.
- If more than one variable entry has the same name, all instances of that variable are assigned the value of the last occurrence of the variable; that is, the occurrence closest to the bottom of the display that you can scroll.
- If the table has keys, the values for the keys in the added row must be different from those in all the existing rows when you leave the Add Row option. Otherwise, a message is displayed and the row is displayed again so you can change the keys.
- Blank save names are ignored and do not need to be deleted, even if data is left in the value.
- Hexadecimal data that usually cannot be displayed is converted to characters that can be displayed or is typed by using the form:

`X'nnnnnnnn'`

where:

n An integer 0–9 or an alphabetic character A–F. There must be an even number of characters within the quotation marks.

- Variables defined with the VDEFINE service as non-character are shown in converted form; do not change them by using the hexadecimal representation. A format or length error causes an error message to be displayed when you use the END command.

Add Row Commands: The Add row option uses the CANCEL, END, and LOCATE commands, and the D (delete), I (insert), and R (repeat) Dialog Test line commands described in “Commands” on page 301. Inserted and repeated lines always have a type of S because you can add only save variables to a row of an existing table. Also, you can delete only save variables.

5—Display structure

When you select the Display structure option on the Tables panel, you are shown a display of the table structure for the table specified in the **Table Name** field. You can scroll this display (Figure 200 on page 325) using the scroll commands. The table name appears in the panel header.

Dialog Test

Menu Utilities Help

Structure of Table ISPKEYS Row 1 to 8 of 17

Number of keys . . . : 1 Number of rows . . . : 7
 Number of names . . : 72 Current row pointer . : 1

KEYS: KEYLISTN

NAMES: KEY1DEF KEY1LAB KEY1ATR KEY2DEF KEY2LAB
 KEY2ATR KEY3DEF KEY3LAB KEY3ATR KEY4DEF
 KEY4LAB KEY4ATR KEY5DEF KEY5LAB KEY5ATR
 KEY6DEF KEY6LAB KEY6ATR KEY7DEF KEY7LAB
 KEY7ATR KEY8DEF KEY8LAB KEY8ATR KEY9DEF
 KEY9LAB KEY9ATR KEY10DEF KEY10LAB KEY10ATR

Command ==> F1=Help F2=Split F3=Exit F6=Resize F7=Backward
 F8=Forward F9=Swap F10=Actions F12=Cancel

Option ==> 7.4
 F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
 F10=Actions F12=Cancel

Figure 200. Structure of Table Panel (ISPYTPSR)

The display contains the following fields:

Number of keys	Number of key variables in a row.
Number of names	Number of name variables in a row.
Number of rows	Number of rows currently in the table.
Current row pointer	Current row pointer value.
KEYS	A list of the names of all the key variables.
NAMES	A list of the names of all the name variables.

Display Structure Command: The KEYS and NAMES lists can be scrolled, and you can use the LOCATE command to find a specific variable name. See “Finding a Character String” on page 303 for information on its use.

6—Display status

If you select the Display status option from the Tables panel, one of two data information panels is displayed for the table specified in the **Table Name** field. The information reflects all operations using the specified table, including those done at your request by the Tables options under Dialog Test.

Table Not Open: If the table is not open for your user ID, you are shown a Status of Table panel (Figure 201 on page 326) with the value NOT OPEN in the **Status for this screen** field.

Tables (Option 7.4)

```

Dialog Test-----
Menu  Utilities  Help
-----
                        Status of Table ISPKEYS
Status for this screen : NOT OPEN      Date created       : 1988/10/20
Table available        : YES           Time created        : 15.55.16
                                           Last date modified  : 1993/11/02
                                           Last time modified  : 13.33.37
                                           Last modified by    : A060083
                                           Original row count   : 1
                                           Current row count    : 7
                                           Modified row count   : 7
                                           Update count         : 94
More: +
-----
                        Virtual storage
Command ==>
F1=Help      F2=Split    F3=Exit      F6=Resize    F7=Backward
F8=Forward   F9=Swap      F10=Actions  F12=Cancel
-----
Option ==> 7.4
F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward   F9=Swap
F10=Actions  F12=Cancel

```

Figure 201. Status of Table Panel with Table Not Open (ISPYTPS1)

The panel contains the following fields:

Status for this screen	Shows that the table is NOT OPEN for this logical screen.
Table available	YES or NO; whether you can open the table.
Date created	Date the table was created; shown in national format.
Time created	Time the table was created.
Last date modified	Date the table was last modified; shown in national format.
Last time modified	Time the table was last modified.
Last modified by	User ID of the user who last changed the table.
Original row count	The number of rows that were added to a newly created table before closing the table for the first time.
Current row count	The number of rows currently in the table.
Modified row count	The number of rows in the table that have been changed at least once. A row that has been added to an existing table is also considered a changed row.
Update count	Number of times the table has been modified. One or more updates during any table open or close sequence increments this counter by one.
Virtual storage	The number of bytes of virtual storage required by the table when it is open.

The Modify row option on the Tables panel allows you to change a key of a keyed table by adding the new row and deleting the old row. The row counts thus reflect this processing when changing a key value.

Table Open: If the table is open for your user ID, you are shown a Status of Table panel (Figure 202) with the value OPEN in the Status for this screen field.

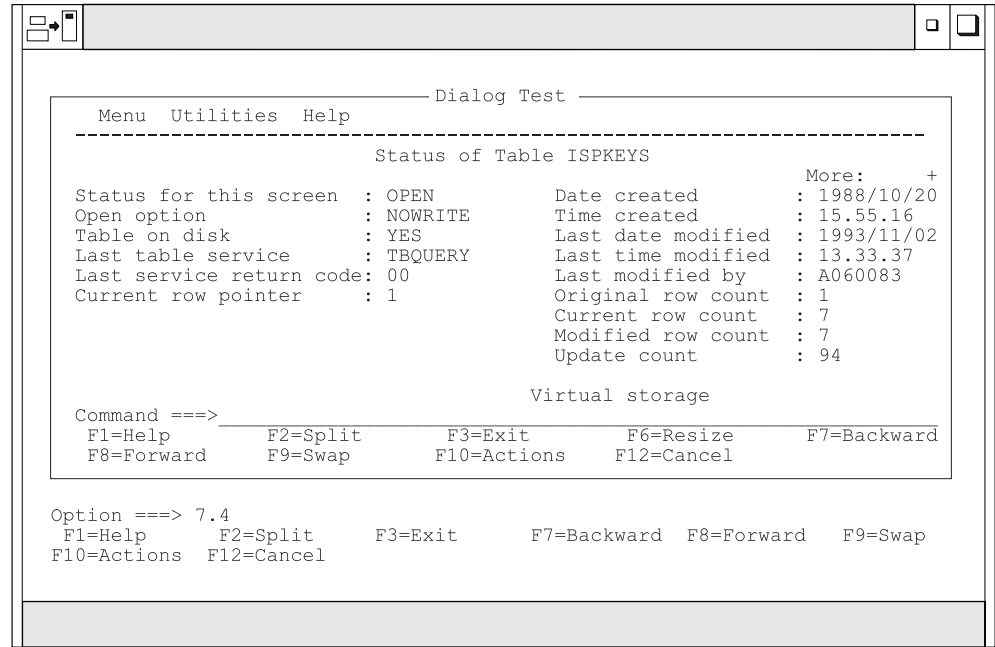


Figure 202. Status of Table Panel with Table Open (ISPYTPS1)

This panel contains the following fields:

Status for this screen

Shows that the table is OPEN for this logical screen.

Open option

Option used to open the table; this value can be WRITE, NOWRITE, SHR WRITE, or SHR NOWRITE.

Table on disk

Whether the table has been saved on disk; this value can be YES or NO.

Last table service

Name of the last table service called.

Last service return code

Last table services return code.

Current row pointer

Current position in the table.

Date created

Date the table was created; shown in national format.

Time created

Time the table was created.

Last date modified

Date the table was last modified; shown in national format.

Tables (Option 7.4)

Last time modified

Time the table was last modified.

Last modified by

User ID of the user who last changed the table.

Original row count

The number of rows that were added to a newly created table before closing the table for the first time.

Current row count

The number of rows currently in the table.

Modified row count

The number of rows in the table that have been changed at least once. A row that has been added to an existing table is also considered a changed row.

Update count

Number of times the table has been modified. One or more updates during any table open or close sequence increments this counter by one.

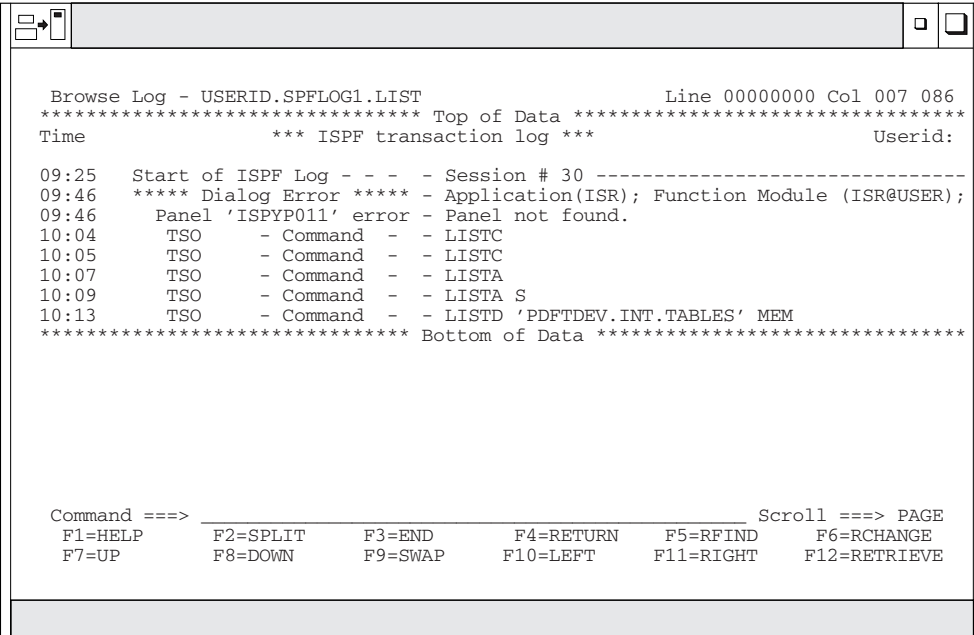
Virtual storage

The number of bytes of virtual storage required by the table.

The Modify row option on the Tables panel allows you to change a key of a keyed table by adding the new row and deleting the old row. The row counts thus reflect this processing when changing a key value.

Log (Option 7.5)

The Log option (7.5) allows you to display and browse data recorded in the ISPF transaction log, as shown in Figure 203.



```
Browse Log - USERID.SPFL0G1.LIST                               Line 00000000 Col 007 086
***** Top of Data *****
Time                *** ISPF transaction log ***                Userid:

09:25  Start of ISPF Log - - - Session # 30 -----
09:46  ***** Dialog Error ***** - Application(ISR); Function Module (ISR@USER);
09:46  Panel 'ISPYLP1' error - Panel not found.
10:04  TSO      - Command - - LISTC
10:05  TSO      - Command - - LISTC
10:07  TSO      - Command - - LISTA
10:09  TSO      - Command - - LISTA S
10:13  TSO      - Command - - LISTD 'PDFTDEV.INT.TABLES' MEM
***** Bottom of Data *****

Command ==>
F1=HELP      F2=SPLIT    F3=END      F4=RETURN   F5=RFIND    F6=RCHANGE
F7=UP        F8=DOWN    F9=SWAP    F10=LEFT   F11=RIGHT   F12=RETRIEVE
```

Figure 203. ISPF Transaction Log (ISPYLP1)

You can use all the Browse commands, except BROWSE, while looking at the ISPF log.

ISPF Transaction Log Not Available

Sometimes the log is not available for browsing. This can occur when:

- The log data set is empty.
- The log data set was not created for this session because 0 was entered in the **Primary pages** field on the Log Set Defaults and List Set Defaults pop-ups, which can be reached by selecting Option 0 from the ISPF Primary Option Menu and then selecting the Log Data set defaults and List Data set defaults choices from the Log/List pull-down.
- No data has been written to the log during this session, and although the log data set exists and is not empty, you did not end the last ISPF session normally; for example, an abend can have ended the session. You can browse the log if you take an action that causes a log entry to be written.
- The log data set was previously allocated with a disposition of OLD. It must be allocated with a disposition of MOD.
- The log data set has been previously allocated to SYSOUT.

Trace Output in ISPF Log

The following trace output is written to the ISPF log:

- Trace header entries
- Function trace entries
- Variable trace entries.

Each type of entry follows the format of other log entries: a short summary on the left, and a detailed entry on the right.

Trace Header Entries

The first line of trace data is a trace header that identifies the trace and shows the current application ID, the current function, and the current screen. For split-screen mode, the original screen is 1 and the screen generated by the SPLIT command is 2. The summary section of the header entry identifies the entry as a dialog trace. The trace header entry is written during the test session whenever a function or variable trace entry is to be written for an application, function, or screen that differs from the last.

For example, a trace of logical screen 1 of function TESTF1 in application ISR would place the following line in the ISPF log:

```
DIALOG TRACE ---- - APPLICATION(ISR) FUNCTION(TESTF1) SCREEN(1)
```

Function Trace Entries

A pair of function trace entries, a BEGIN entry and an END entry, is generated during a function trace for each traced dialog service that is called. A service can be called from a user dialog that is currently processing, or from a Dialog Test action for the user. The summary portion of each of these entries shows the name of the dialog service, whether it is the beginning or the end of its processing, and whether it was called indirectly from a Dialog Test panel. If the word TEST does not appear, the user dialog called the service directly. For END entries, the service return code is shown on a second line.

The detailed section of the log entries contains an image of the service call and the parameters used to call that service, using two lines if necessary. For example:

Log (Option 7.5)

```
DISPLAY .. BEGIN ... TEST - DISPLAY PANEL(XYZ)
:
DISPLAY .. END.. ... TEST - DISPLAY PANEL(XYZ)
..RETURN CODE (0)
```

There can be many log entries between the begin and end entries. For example, any active variable traces can cause log entries during a SELECT trace.

You should note the following about the service call image:

- The image is truncated after the second line.
- ISPEXEC calls are shown as typed in the dialog.
- ISPLINK and ISPLNK calls (except for the ISREDIT service) are displayed with their parameter values separated by commas. Name-lists are shown as typed in the dialog, in either string or structure format. Structure format includes the count, element length, and list of names. For a variable services parameter whose context is defined by the name-list parameter on the service call, the first four bytes of the parameter value are displayed in hexadecimal format (X'nnnnnnnn').
- Dialog Test calls are shown using the command call format without the ISPEXEC prefix.

Variable Trace Entries

Two variable trace entry lines are generated for each variable trace log entry. The variable can be referred to or set by a user dialog directly or indirectly by a dialog service, or explicitly set by a Dialog Test option for a user. The summary parts of these entry lines identify the trace. Line one shows the name of the variable, the pool that contains it (F for function, S for shared, P for profile), and an indicator (TEST) if a Dialog Test option set the value. Line two shows the operation done for the variable (GET, PUT, or CHG) and the name of the dialog service that did the operation for non-TEST entries.

The current value of the variable is printed in the detail section of the log entry and can span two lines. For example:

```
LIB1.... POOL(P) .... - VALUE(FLAG)
...GET by EDIT      -
```

The value is truncated after the second line.

If the variable value contains characters that cannot be displayed, the value is displayed in hexadecimal format (X'nnnnnnnn').

Dialog Services (Option 7.6)

The Dialog Services option (7.6) allows you to call a dialog service by entering the service call with or without the ISPEXEC characters.

Figure 204 on page 331 shows the Invoke Dialog Service panel.

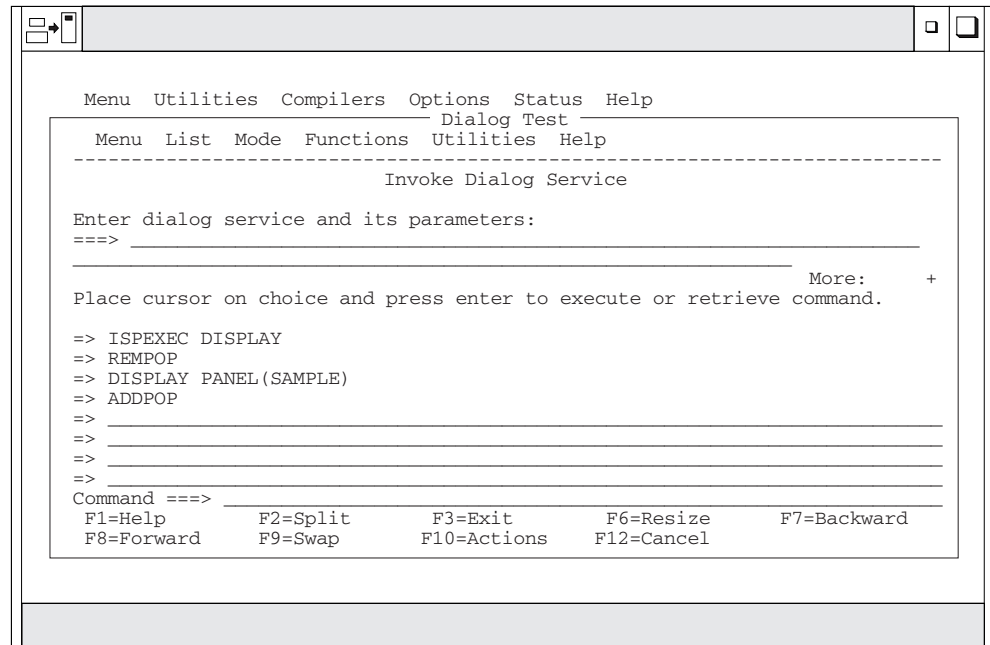


Figure 204. Invoke Dialog Service Panel (ISPYS1)

On this panel, if you want to display panel XYZ, enter:

```
====> DISPLAY PANEL(XYZ)
```

or

```
====> ISPEXEC DISPLAY PANEL(XYZ)
```

The service is called when you press the Enter key. You are informed of the service's completion and return code.

You can call any dialog service that is valid in the command environment except CONTROL at a breakpoint or before calling a function.

The Invoke Dialog Service panel has a saved command area (the bottom portion of the screen) that contains a list of up to 10 commands that you have saved. These commands are point-and-shoot fields. The mode you specify from the Mode pull-down menu on the action bar determines what happens when you select a command.

Invoke Dialog Service Panel Action Bar

The Invoke Dialog Service panel action bar choices function as follows:

Note: The Invoke Dialog Service panel action bar contains three pull-down choices that let you control the saved command area.

- List
- Mode
- Functions.

Menu See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

List The List pull-down offers you the following choices:

Dialog Services (Option 7.6)

Note: The current setting will be shown as an unavailable choice; that is, it will display in blue (the default) with an asterisk as the first digit of the selection number (if you are running in GUI mode, the choice will be *grayed*).

Update On

Makes the list of commands in the saved command area *live*; that is, new commands are appended to the list automatically.

Update Off

Makes the list of commands in the saved command area *static*; that is, new commands are not appended to the list automatically.

Mode The Mode pull-down offers you the following choices:

Note: The current setting will be shown as an unavailable choice; that is, it will display in blue (the default) with an asterisk as the first digit of the selection number (if you are running in GUI mode, the choice will be *grayed*).

Retrieve

Allows commands to be retrieved from the saved command area and placed on the TSO Command Entry field (==>) so that you can edit them before they are executed. This mode is the default.

Execute

Allows commands to be retrieved from the saved command area and executed in one step.

Delete Allows you to delete commands from the saved command area without executing the commands. Place the cursor on the command to be deleted and press Enter. The command will be blanked out.

Functions

The Functions pull-down offers you the following choice:

Note: The choice is unavailable when you initially enter the panel and after you compress the list; that is, it will display in blue (the default) with an asterisk as the first digit of the selection number (if you are running in GUI mode, the choice will be *grayed*).

Compress List

Compresses the saved command area by removing deleted entries.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help The Help pull-down offers you the following choices:

- 1 General
- 2 General Dialog Test

Special Display Panel

If you issue the DISPLAY service call with only a message parameter, or with no parameter at all, the Special Display Panel is shown (Figure 205 on page 333).

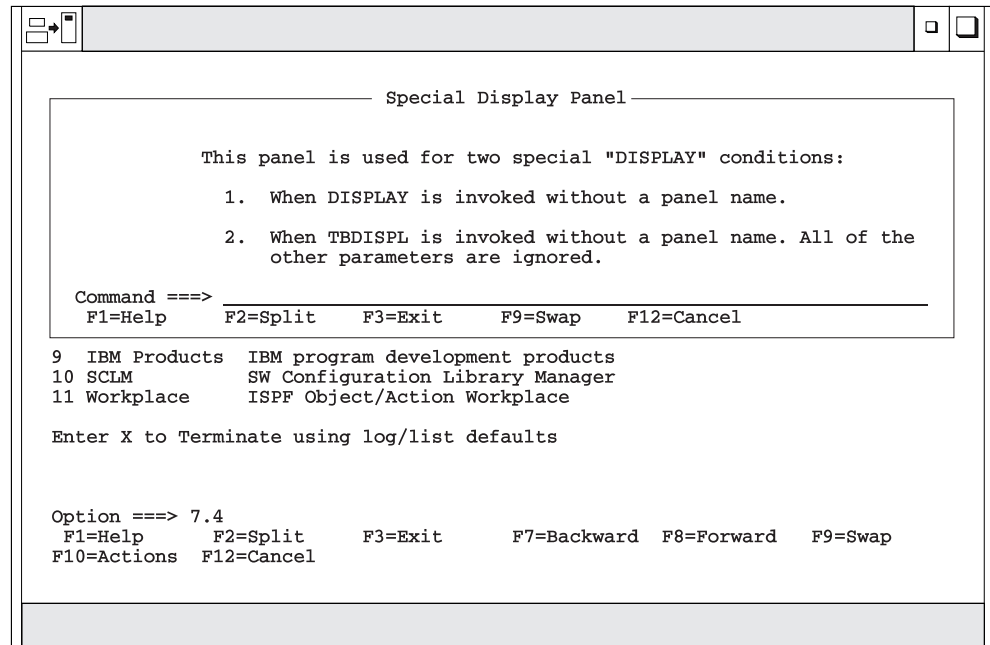


Figure 205. Special Display Panel (ISPYS2)

Traces (Option 7.7)

The Traces option (7.7) allows you to define, change, and delete trace specifications. You can trace processed dialog services, except for the VPUT or VGET service issued from a panel, and dialog variables to which are referred during dialog processing. Trace data is placed in the transaction log, where you can browse it by using the Log option (7.5) or print it when you leave ISPF. You can also print the log data set during an ISPF session by using the ISPF LOG command.

Since tracing can degrade dialog performance and create large amounts of output, you should be careful in setting the scope of trace definitions.

When you select this option, a selection panel is displayed (Figure 206 on page 334) on which you can show the type of trace you want to define.

Traces (Option 7.7)

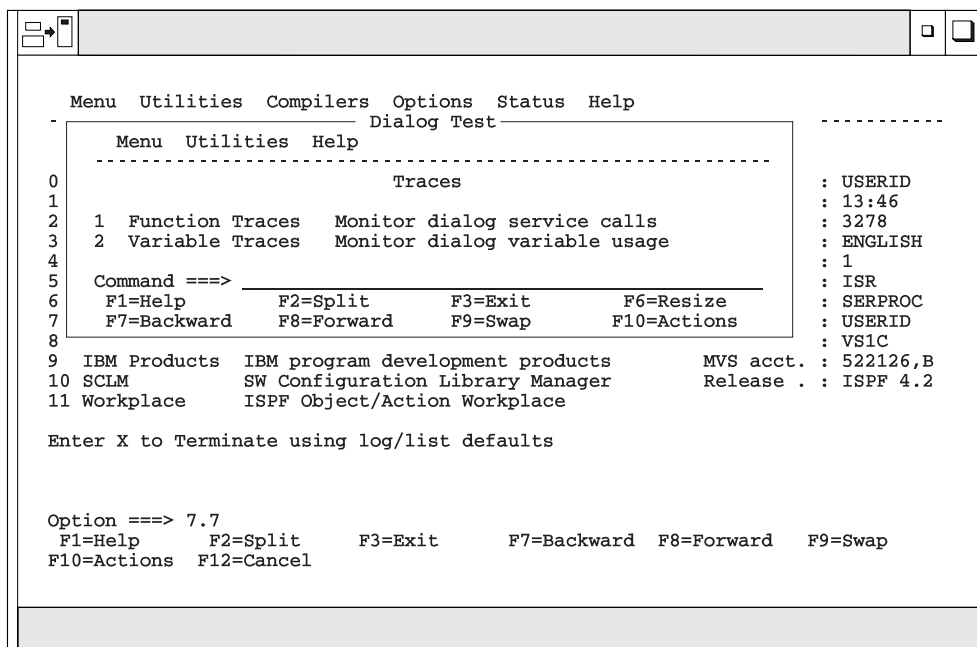


Figure 206. Traces Panel (ISPYRI1)

The following sections describe the options shown at the top of the Traces panel.

1—Function Traces

The Function Traces option on the Traces panel is used to establish criteria for recording the names of dialog service calls, the service parameters, and return code in the ISPF log. If either a dialog or Dialog Test processing causes a service call, that call is recorded in the trace. An example of Dialog Test processing that causes a service call is the use of the Panels option (7.2) to display a panel. Whenever a new application or function causes data to be recorded, a header is placed in the trace.

When you select the Function Traces option, you are shown a panel that you can scroll (Figure 207 on page 335). The pop-up window can also be resized using the RESIZE command. The panel lists all currently defined function traces.

You can add, delete, and change function trace definitions by using this panel, either before calling a function or at a breakpoint.

Menu Utilities Help

Row 1 to 7 of 13

Add, delete, and change traces. Underscores need not be blanked.
Enter END command to finalize changes.

Function (Required)	Active (YES,NO) (No entry=YES)	Dialog services to be traced (No entry=all) ("OR" is assumed between names)
.... ALL	NO	
....		
....		
....		
....		
....		
....		

Command ==> F1=Help F2=Split F3=Exit F6=Resize F7=Backward
F8=Forward F9=Swap F10=Actions F12=Cancel

Figure 207. Function Traces Panel (ISPYRFP)

Each line defines a function trace, showing a line command area (') and the following fields:

Function

The name of the user function that should contain the trace, or ALL to trace every dialog function. Initially, ALL is presented on the display but is not started. Change the NO to a YES in the Active column to start such a trace. If you want to trace a function whose name is ALL, enclose the name in single quotes to distinguish it; that is, type 'ALL', not ALL.

Active Whether the trace is to be active now:

YES The trace is currently active.

NO The trace is currently not active.

Blank The trace is currently active.

Dialog services to be traced

Names of dialog services to be traced. No entry in this field shows all calls to dialog services for the function are to be traced.

All function traces exist until you leave Dialog Test, or until you delete them from this panel. Enter new information by typing over the existing data. The underscores are pad characters to show the starting and ending positions for each field; you do not need to blank them out. You can create several function traces before you press the Enter key.

During dialog processing, to determine whether the criteria for a function trace have been met, Dialog Test processes a logical AND of the Function, Active, and Dialog services fields specified for that function trace. Dialog Test also processes a logical OR within the Dialog services field to determine whether a particular dialog service has been matched. Therefore, if you want more than one trace for a function, you should create multiple rows.

Traces (Option 7.7)

Function Traces Commands

The Function Traces option uses the CANCEL, END, and LOCATE commands, and the D (delete), I (insert), and R (repeat) Dialog Test line commands described in “Commands” on page 301.

2—Variable Traces

The Variable Traces option on the Traces panel is used to establish criteria for recording variable usage. A variable’s usage is recorded if an ISPF service is directly asked to operate on the variable (such as VGET, VPUT, and VCOPY), or if an ISPF service is indirectly asked to operate on the variable (such as DISPLAY). Variables changed under the Variables option (7.3) are also recorded if the trace specifications are met.

When you select the Variable Traces option, you are shown a display that you can scroll (Figure 208). The pop-up window can also be resized using the RESIZE command. The display lists all currently defined variable traces. You can add, delete, and change variable trace definitions at a breakpoint, or by using this panel before calling a function.

Variable Traces

Menu Utilities Help

Row 1 to 8 of 13

Add, delete, and change traces. Underscores need not be blanked.
Enter END command to finalize changes.

Variable (Required)	Pool (No entry=all)	Operation (GET, PUT, CHG) (No entry=all)	Function (No entry=all)	Active (YES, NO) (No entry=YES)
ALL				NO

Command ==> F1=Help F2=Split F3=Exit F6=Resize F7=Backward
F8=Forward F9=Swap F10=Actions F12=Cancel

Figure 208. Variable Traces Panel (ISPYRVP)

Each line defines a variable trace, showing a line command area (') and the following fields:

Variable

Name of the variable to be traced, or ALL to show tracing of all variables. Initially, ALL is presented on the display but is not started. Change the NO in the Active column to YES to start such a trace. If you want to trace a variable whose name is ALL, enclose that name in single quotes to distinguish it; that is, type 'ALL', not ALL.

Pool

Pool of interest for variable tracing:

- F** Function variable pool.
- S** Shared variable pool.
- P** Profile variable pool.

Blank All pools.

Operation

Type of variable reference to trace:

GET Accesses to the variable's value.

PUT Stores to the variable's value.

CHG Changes to the variable's value.

Blank All references to variable are traced.

Function

If there is no entry, this variable is traced for all functions.

Active Indication of whether the trace is to be active:

YES The trace is currently active.

NO The trace is currently not active.

Blank The trace is currently active.

All variable trace definitions exist until you leave Dialog Test, or until you delete them from this panel. Enter new information by typing over the existing data. The underscores are pad characters to show the start and end of each field; you do not need to blank them out. You can create several variable traces before you press the Enter key.

During dialog processing, to determine whether the criteria for a variable trace have been met, Dialog Test processes a logical AND of the Variable, Pool, Operation, Function, and Active fields specified for that variable trace. Therefore, if you want more than one trace for a variable, you should create multiple rows.

Variable Traces Commands

The Variable Traces option uses the CANCEL, END, and LOCATE commands, and the D (delete), I (insert), and R (repeat) Dialog Test line commands described in "Commands" on page 301.

Breakpoints (Option 7.8)

A *breakpoint* is a location at which the processing of your dialog is suspended so that you can use Dialog Test facilities. The Breakpoints option (7.8) allows you to show where such temporary suspensions should occur. At a breakpoint, you can examine and manipulate dialog data such as tables and variables. You can also specify new test conditions, such as traces and other breakpoints.

Breakpoints are located immediately before a dialog service receives control or after it relinquishes control. Breakpoint definitions cause special handling within the ISPLINK, ISPLNK, or ISPEXEC interfaces to dialog services; no user dialog code is modified. When the criteria for a breakpoint are satisfied, your dialog is suspended. You can then do any of the functions shown on the Breakpoint Primary Option Panel. You cannot use as a breakpoint the VPUT or VGET service issued from a panel, nor will breakpoints occur for selections from a menu (selection) panel. Breakpoints occur only for dialog service calls that use the ISPLINK, ISPLNK, or ISPEXEC interfaces.

Along with several menu bar items common across ISPF Version 4.1, the Breakpoints panel has added the Qualify pull-down. You can now display the qualification parameter values from the Breakpoints panel in two ways:

- Enter the QUAL primary command
- Select the Qualifications... choice from the Qualify pull-down.

Breakpoints (Option 7.8)

The Function and Active columns are overlaid with a column of data titled Qualification Parameter Values; this column was logically off the screen to the right of the first Breakpoints panel. To resume the format of the Breakpoints panel, you can do one of the following:

- Enter the RESUME primary command
- Select the Breakpoints... choice from the Qualify pull-down.

Specifying Breakpoints

When you select the Breakpoints option, you are shown a display that you can scroll (Figure 209). The pop-up window can also be resized using the RESIZE command. The display lists all currently defined breakpoints for this session. You can use this panel to add, delete, or change breakpoint definitions, either before calling a function or at a breakpoint.

Service (Required)	When (BEFORE,AFTER,Rnn) (No entry=all)	Function (No entry=all)	Active (YES,NO) (No entry=YES)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Command ==> F1=Help F2=Split F3=Exit F6=Resize F7=Backward
F8=Forward F9=Swap F10=Actions F12=Cancel

Scroll ==> PAGE

Figure 209. Breakpoints Panel (ISPYBP1)

Breakpoints Panel Action Bar

The Breakpoints panel action bar choices function as follows:

Menu

See the **Menu Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Qualify

Displays the Qualification parameter values field on the Breakpoints panel so that you can further constrain the conditions under which a breakpoint is to occur.

Utilities

See the **Utilities Action Bar Choice** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for information on the Utilities pull-down.

Help

The Help pull-down offers you the following choices:

1	General
2	Definitions
3	Breakpoints Panel
4	Qualification Panel
5	Line Commands
6	Primary Commands
7	Usage Notes
8	General Dialog Test

Breakpoints Panel Fields

Each line defines a breakpoint and includes a line command area ('') and the following fields:

Service	Name of the dialog service at which to interrupt dialog processing. This field is required.								
When	Indication of when the breakpoint should occur: <table> <tr> <td>BEFORE</td><td>Before the service receives control.</td></tr> <tr> <td>AFTER</td><td>After the service finishes processing.</td></tr> <tr> <td>Rnn</td><td>After the service finishes processing, but only if the return code is the integer <i>nn</i>.</td></tr> <tr> <td>Blank</td><td>Before and after service processing.</td></tr> </table>	BEFORE	Before the service receives control.	AFTER	After the service finishes processing.	Rnn	After the service finishes processing, but only if the return code is the integer <i>nn</i> .	Blank	Before and after service processing.
BEFORE	Before the service receives control.								
AFTER	After the service finishes processing.								
Rnn	After the service finishes processing, but only if the return code is the integer <i>nn</i> .								
Blank	Before and after service processing.								
Function	The program function or command function that must be processing for the breakpoint to be taken. No entry in this field shows that the breakpoint can occur for all functions.								
Active	Indication of whether the breakpoint is to be active now: <table> <tr> <td>YES</td><td>It is currently active.</td></tr> <tr> <td>NO</td><td>It is currently not active.</td></tr> <tr> <td>Blank</td><td>It is currently active.</td></tr> </table> <p>If present at the end of a row, shows that qualification data exists for the breakpoint. This field is non-modifiable. See "Qualification Parameter Values" for additional information.</p>	YES	It is currently active.	NO	It is currently not active.	Blank	It is currently active.		
YES	It is currently active.								
NO	It is currently not active.								
Blank	It is currently active.								

All input fields contain underscores. Empty lines are added to the first display to fill up the screen. If you delete all the lines used for defining breakpoints, the display is automatically refreshed with enough empty lines to fill the screen again.

All breakpoints exist until you end or cancel your Dialog Test session, or until you delete them from this panel. Enter new information by typing over the existing data. The underscores are pad characters to show the starting and ending positions for each field; you do not need to blank them out. You can create several breakpoints before you press the Enter key.

Breakpoints Commands

From the Breakpoints panel, you can use the CANCEL, END, LOCATE, QUAL, and RESUME commands, and the D (delete), I (insert), and R (repeat) Dialog Test line commands described in "Commands" on page 301.

Qualification Parameter Values

A different part of the Breakpoints panel allows you to further constrain the conditions under which a breakpoint is to occur by allowing you to enter qualification parameter values. On this part of the panel, you can list parameter data with which the named service must have been called.

Breakpoints (Option 7.8)

The Breakpoints panel with the Qualification parameter values field is displayed (Figure 210) if you enter the QUAL primary command on the first part of the Breakpoints panel or if you select the Qualifications... choice from the Qualify pull-down. The Function and Active columns are overlaid with a column of data titled Qualification parameter values; this column was logically off the screen to the right of the first Breakpoints panel. To resume the format of the Breakpoints panel, use the RESUME primary command or select the Breakpoints... choice from the Qualify pull-down.

Dialog Test

Menu Qualify Utilities Help

Breakpoints Row 1 to 5 of 13

Add, delete, and change breakpoints. Underscores need not be blanked.
Enter END command to finalize changes.

Service (Required)	When (BEFORE, AFTER, Rnn) (No entry=all)	Qualification parameter values (No entry=none) ("AND" is assumed between values)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Command ==> _____ Scroll ==> PAGE

F1=Help F2=Split F3=Exit F6=Resize F7=Backward
F8=Forward F9=Swap F10=Actions F12=Cancel

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F10=Actions F12=Cancel

Figure 210. Breakpoints Panel with Qualification Parameter Values (ISPYBP2)

The lines on the Breakpoints panel with qualification parameter values correspond to the lines on the first Breakpoints panel; "Specifying Breakpoints" on page 338 describes the Service and When fields. In the Qualification parameter values field, you can enter any combination of the following for all services except SELECT:

- One or more parameter values, separated by blanks, that the dialog passes to the service. No order is implied by the specification of the parameter values.
For example, if you want a breakpoint to occur when message ABC0001 is included on a DISPLAY service request, you should specify ABC0001. If the breakpoint should occur only when message ABC0001 and panel XYZ are both included, you should specify ABC0001 XYZ.
- One or more command call keywords, separated by blanks, that have values that are not blank when a dialog calls the service. For ISPLINK or ISPLNK calls, the keywords matching the calling sequence parameter positions are used.
For example, if you want a breakpoint to occur whenever the DISPLAY service is called with a message, then specify MSG.

For ISPF's SELECT and ISREDIT services, you can enter one or more parameter strings that would be entered on these two service calls. A *parameter string* is a series of characters delimited by a blank, a comma, a single quotation mark, or a left or right parenthesis.

For example, if a SELECT call is:

```
SELECT PGM(ABC) PARM(1 2 3 5 '6'),
```

then all or any of the following strings can be used: SELECT, PGM, ABC, 1, 2, 3, 5, 6.

For a breakpoint to be taken, all qualification data listed must be matched.

All line commands and change capabilities are still available on the Breakpoints panel with qualification parameter values.

During dialog processing, to determine whether the criteria for a breakpoint have been met, Dialog Test processes a logical AND of the Service, When, Function, Active, and Qualification fields specified for that breakpoint. Therefore, if you want more than one breakpoint for an ISPF service, you should create multiple rows.

When you use the Breakpoints option (7.8), be aware of the following items:

Qualification

If you plan to qualify several breakpoints, it can be more efficient to specify all breakpoint data on the Breakpoints panel with qualification parameter values.

END command

You can use the END primary command from either the first Breakpoints panel or the Breakpoints panel with qualification parameter values.

Input errors

You must correct input errors before leaving any display using the END, QUAL, or RESUME command. You can use the CANCEL command to end the Breakpoints option, even if input errors remain on the display.

Syntax checking

A dialog service call must pass a basic syntax check before a breakpoint is honored.

Control display

If any CONTROL service settings for DISPLAY LINE or DISPLAY SM (Session Manager) were in effect before the breakpoint, such settings are lost.

Finding a Breakpoint

If you call a dialog function or selection panel and find a breakpoint, the Breakpoint Primary Option Panel is displayed. Figure 211 on page 342 shows this selection panel at a breakpoint just after the ISPF DISPLAY service was called while processing the TEST function in application PAY.

Breakpoints (Option 7.8)

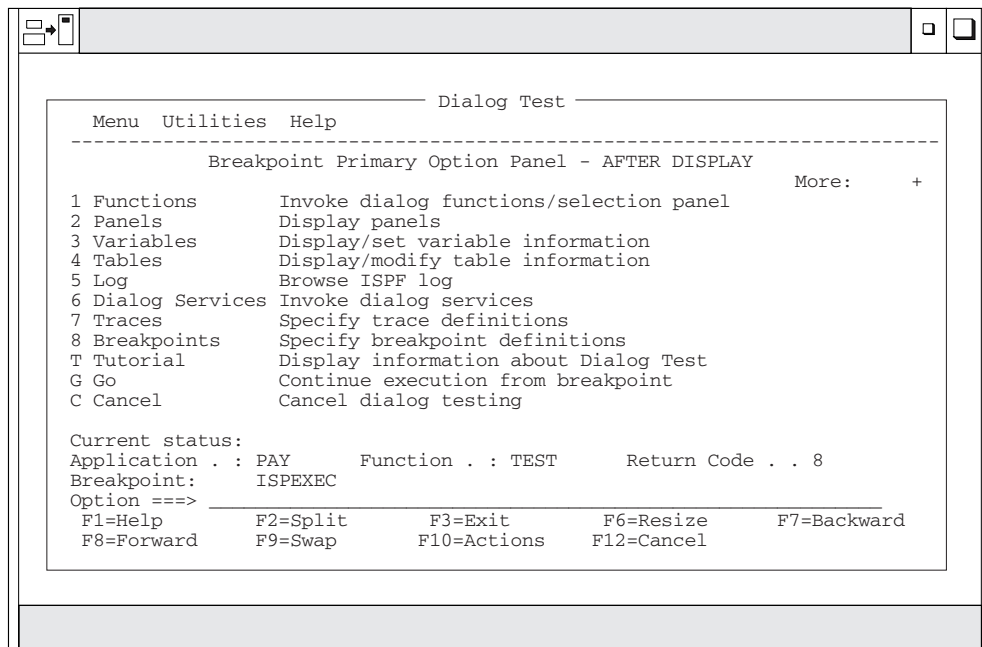


Figure 211. Breakpoint Primary Option Panel (ISPYXM2)

Like the Dialog Test Primary Option Panel, the Breakpoint Primary Option Panel allows you to use the RETURN command from any one of the selected test options to display the Breakpoint Primary Option Panel again. At the Breakpoint Primary Option Panel, the END and RETURN commands have no effect. You must use the Go option (G) to end processing at this breakpoint and continue processing the dialog being tested, or the Cancel option (C) to cancel the Dialog Test option (7). This protects against inadvertent loss of data.

The Breakpoint Primary Option Panel contains all the options of the Dialog Test Primary Option Panel except Exit (7.x) and, as such, presents all but one of the Dialog Test functions to you.

This panel also contains two options not shown on the Dialog Test Primary Option Panel: Go (G) and Cancel (C). When a breakpoint occurs, these options allow you to continue processing or stop processing, respectively:

- G** The Go option continues dialog processing from a breakpoint. The user dialog resumes processing from the point at which it was suspended.
- C** The Cancel option ends dialog testing and displays the first primary option panel you displayed at the beginning of your ISPF session again. All trace and breakpoint definitions are lost when you leave Dialog Test.

When a user dialog finds a breakpoint, the current dialog environment is saved. When you select the Go option, the environment is restored, except for the following:

- If you change variable, table, and file tailoring data at a breakpoint, these actions are an extension of the suspended dialog; it is as though the dialog had taken all the actions itself during processing.
- If you change the service return code on the Breakpoint Primary Option Panel, the new return code is passed back to the dialog as though the service had set the new return code itself.

Breakpoints (Option 7.8)

- If you process the PANELID command at the breakpoint, the last setting for displaying panel identifiers is retained.
- If any CONTROL service settings for DISPLAY LINE or DISPLAY SM (Session Manager) were in effect before the breakpoint, such settings are lost.

Note that the manipulation of one dialog part can cause a change to another dialog part. For example, if a panel is displayed, variables can be set.

All trace and breakpoint definitions are lost if you select the Cancel option.

The Breakpoint Primary Option Panel also displays the following information:

AFTER or BEFORE

An indication of whether the dialog has been suspended after or before the service has processed.

Service Name

The name of the service at which the dialog has been suspended. In Figure 211 on page 342, the service name is DISPLAY.

Current status:

The application's current status when the breakpoint occurred. The following fields show this status:

Application

The application identifier of the suspended user dialog.

Function

The program or command name of the suspended user dialog.

Return code

The dialog service return code. This field is displayed only if the breakpoint occurs after the dialog service has processed. The Return code field is modifiable; its value is passed back to the dialog (as the service's) when you select the Go option. This helps test dialog error handling.

Breakpoint

Up to four display lines showing an image of the dialog service call. Truncation occurs after the second line.

ISPEXEC calls are shown as typed.

ISPLINK (ISPLNK) calls are displayed with their parameter values separated by commas. Name-lists are shown as typed in the dialog, in string format or in structure format. Structure format includes the count, element length, and list of names. For variable services parameters whose context is defined by the name-list parameter on the service call (for example, the variable value areas for a VDEFINE), the first four bytes of the parameter value are displayed in hexadecimal format (X'nnnnnnnn').

ISPEXEC calls from a program are the same as ISPEXEC calls from a command except that ISPEXEC is not displayed.

Tutorial (Option 7.T)

The Tutorial option (7.T) allows you to display information about the Dialog Test facilities. Figure 212 on page 344 shows the first panel displayed when you select the Tutorial option.

Tutorial (Option 7.T)

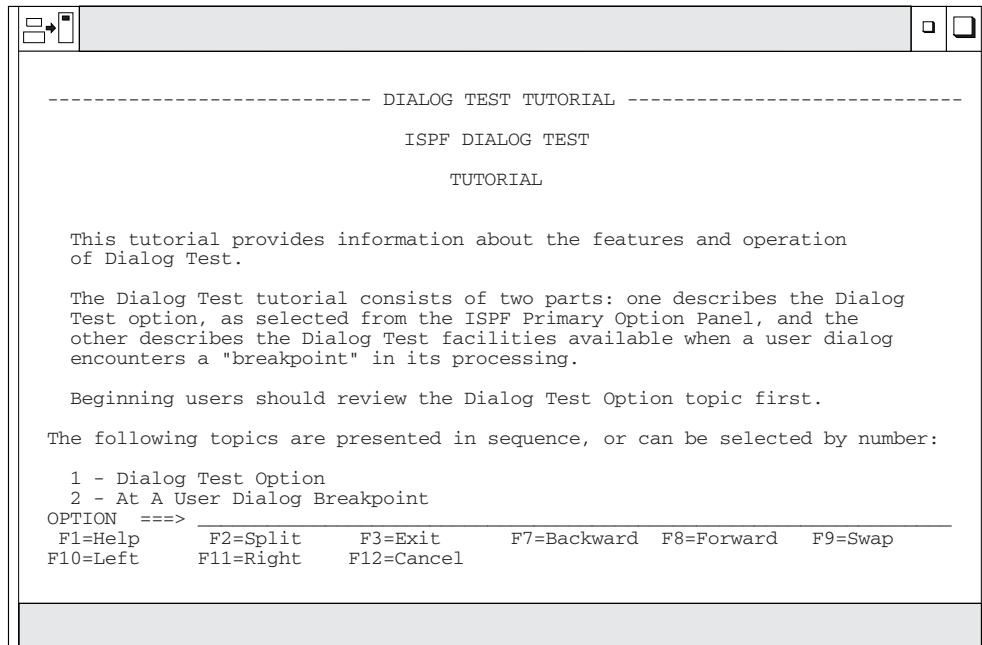


Figure 212. Dialog Test Tutorial - First Panel (ISP70000)

The default function key command assignments for a terminal with 12 function keys are shown at the bottom of the screen if you enter the PFSHOW command.

Exit (Option 7.X)

The Exit option (7.X) ends your Dialog Test session. All trace and breakpoint definitions are lost.

Chapter 9. IBM Products (Option 9)

Option 9 provides an interface to IBM program development products other than ISPF. It displays a panel that lists other IBM products that are supported as ISPF dialogs, as shown in Figure 213. Each of these products is described in a section in this chapter.

When you select one of these products, one of the following occurs:

- If the product is installed and available on your system, ISPF tries to call it. However, the only way ISPF can determine whether a product is installed and available is to check for the existence of a single product-related panel in the panel library concatenation. No other check is made to ensure that the product is correctly installed or that it is completely available to you.
- If the product is not installed or available, ISPF displays an informational panel that describes the product and shows how additional information can be obtained.

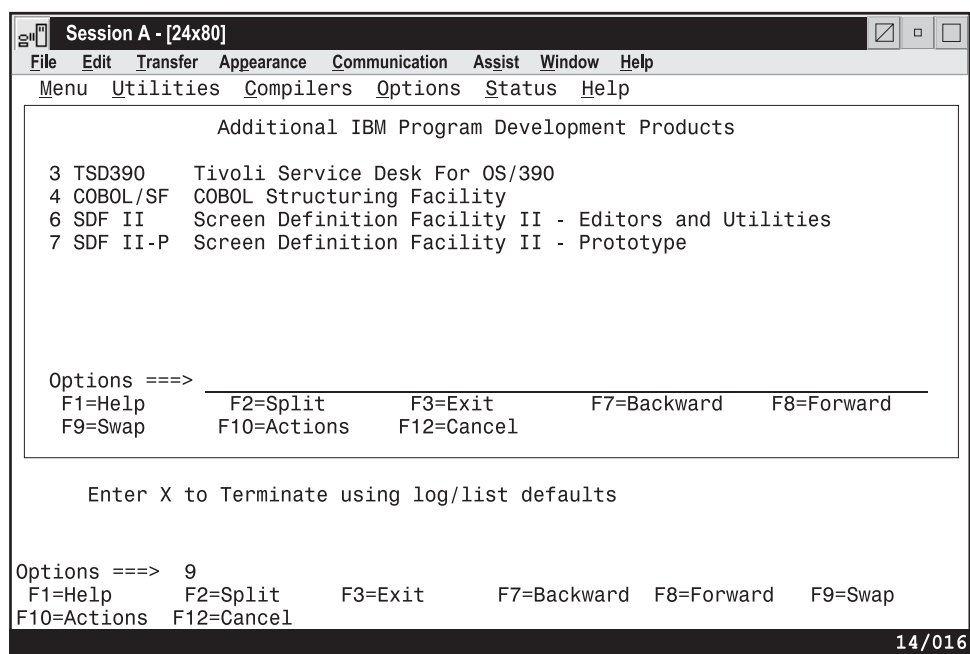


Figure 213. Additional IBM Program Development Products Panel (ISRDIIS)

The names of the products on this panel are point-and-shoot fields. See the **Point-and-Shoot Text Fields** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for more information.

Tivoli Service Desk for OS/390(Option 9.3)

If the Information/Management (INFO/MAN) product is not available on your system, ISPF displays the panel shown in Figure 214 on page 346:

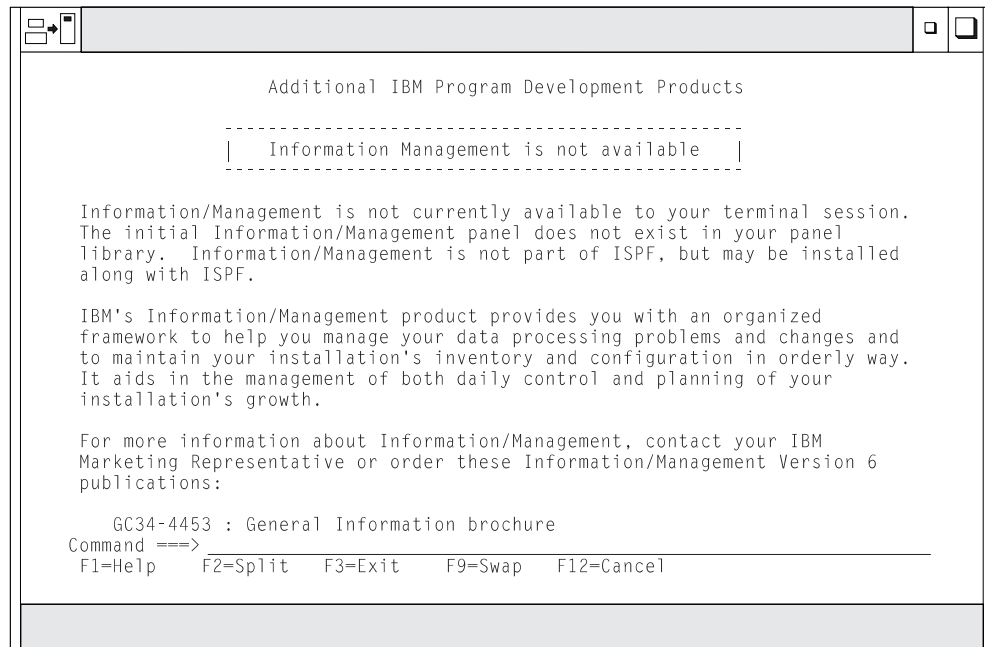


Figure 214. Tivoli Service Desk Panel (ISRINFO)

COBOL/SF-F (Option 9.4)

COBOL/SF-F (Option 9.4)

If the COBOL Structuring Facility (COBOL/SF) is not available on your system, ISPF displays the panel shown in Figure 215:

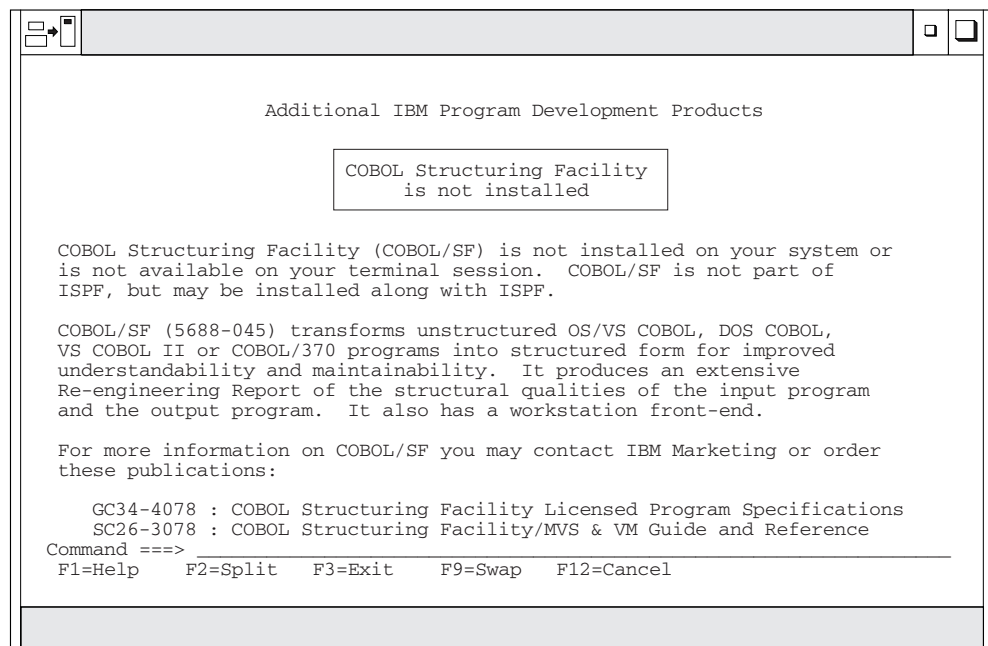


Figure 215. COBOL Structuring Facility Panel - Foreground Dialog (ISRDCSF)

SDF II (Option 9.6)

SDF II (Option 9.6)

If the Screen Definition Facility II - Editors and Utilities (SDF II) is not available on your system, ISPF displays the panel shown in Figure 216:

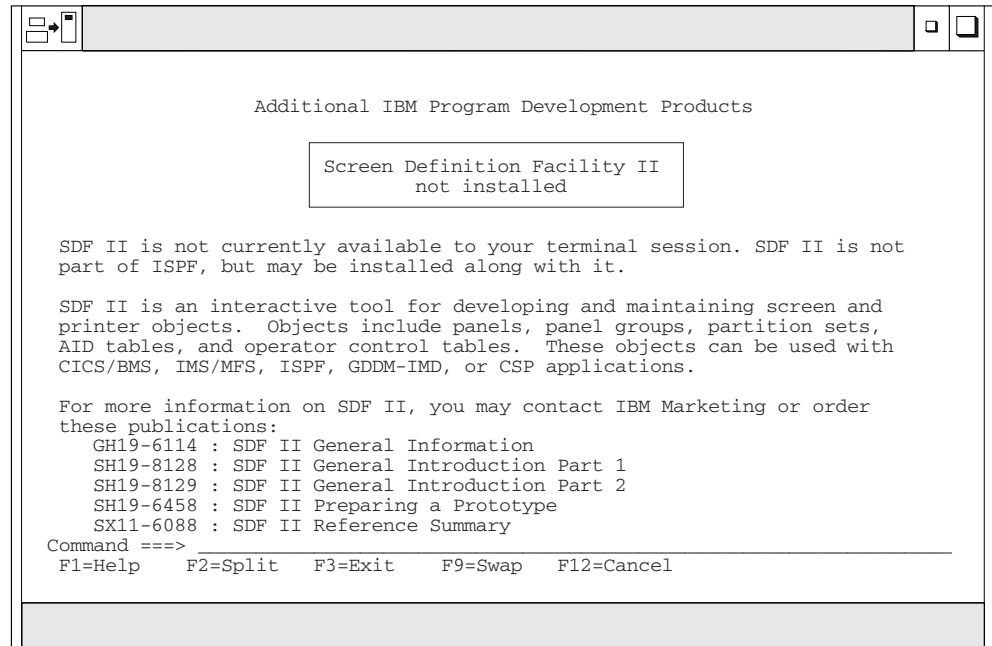


Figure 216. Screen Definition Facility II Panel - Editors and Utilities (ISRDSDFP)

SDF II-P (Option 9.7)

SDF II-P (Option 9.7)

If the Screen Definition Facility II - Prototype (SDF II-P) is not available on your system, ISPF displays the panel shown in Figure 217 on page 348:

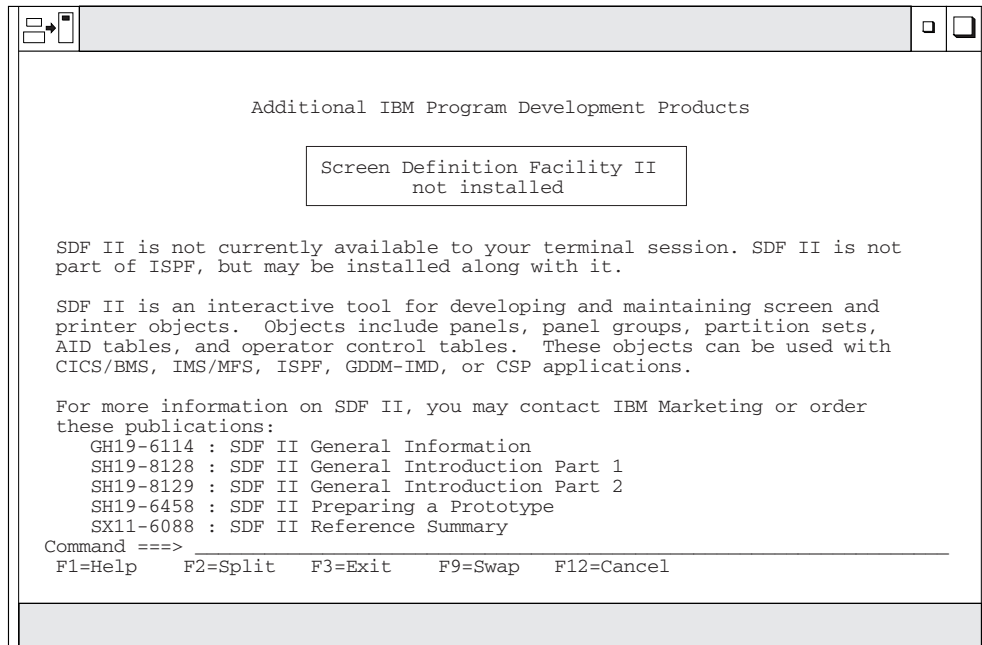


Figure 217. Screen Definition Facility II Panel - Prototype (ISRDSDF)

Chapter 10. SCLM (Option 10)

Option 10 gives you access to the Software Configuration and Library Manager (SCLM), which is an extension of the ISPF library concept. You call SCLM by entering one of the options shown on the panel in Figure 218.

If SCLM does not appear on any of your menu panels or on your *Menu* pull-down, you can still access it by typing **TSO SCLM** on any ISPF command line, then pressing Enter. If SCLM is available to your terminal session, the SCLM Main Menu is displayed. If SCLM is not available on your system, a panel (ISRNOSLM) is displayed to inform you that SCLM is not available to your terminal session.

For more information about SCLM, refer to the ISPF SCLM manuals.

```
File Edit Transfer Appearance Communication Assist Window Help
Menu Utilities Help

SCLM Main Menu

Enter one of the following options:

1 View      ISPF View or Browse data
2 Edit      Create or change source data in SCLM databases
3 Utilities  Perform SCLM database utility/reporting functions
4 Build     Construct SCLM-controlled components
5 Promote   Move components into SCLM hierarchy
6 Command   Enter TSO or SCLM commands
7 Sample    Create or delete sample SCLM project
X Exit      Terminate SCLM

SCLM Project Control Information:
Project . . . . . (Project high-level qualifier)
Alternate . . . . . (Project definition: defaults to project)
Group . . . . . KEENE (Defaults to TSO prefix)

Option ==>
F1=Help      F3=Exit      F10=Actions  F12=Cancel
```

Figure 218. SCLM Main Menu (FLMDMN)

The option names on this panel are point-and-shoot fields. See the **Point-and-Shoot Text Fields** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* for more information.

SCLM Main Menu Action Bar

The SCLM Main Menu panel action bar choices function as follows:

Menu	See the Menu Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Menu pull-down.
Utilities	See the Utilities Action Bar Choice section of the <i>ISPF User Interface</i> chapter of the <i>ISPF User's Guide Volume I</i> for information on the Utilities pull-down.
Help	The Help pull-down offers you the following choices:

SCLM (Option 10)

1	General
2	Topic description
3	Alternate projects
4	Architecture definitions
5	Documentation
6	View
7	Edit
8	SCLM Utilities
9	SCLM Build
10	SCLM Promote
11	SCLM Command Shell

SCLM Overview

SCLM is a library facility that supports projects in developing complex software applications. It does this by providing software configuration and library management support. SCLM supports the software development cycle of an application from the program design phase to release of the final product.

SCLM allows designers and programmers to define the architecture of an application (how the components fit together) and ensures that the architecture definition is followed by automatically controlling, maintaining, and tracking software components. By automatically enforcing guidelines and procedures for developing software, SCLM enhances software quality and improves programmer productivity. For complete information on the use of the SCLM option, refer to *ISPF Software Configuration and Library Manager (SCLM) Developer's and Project Manager's Guide*

SCLM addresses the following software configuration and library management issues:

- Ensures that two programmers are not working on the same component at the same time.
- Allows users to integrate components only at the correct time and only by using the correct procedure.
- Logs and tracks software changes.
- Provides application integrity; all of the software components used to produce the final product are available, but controlled.
- Documents the interfaces between the software components.

SCLM provides the following facilities for automating software configuration and library management tasks:

Project Definition	Establishes the database.
Edit	Uses the ISPF editor to create and modify the software components.
Build	Integrates the software components.
Promote	Moves software components through the library hierarchy.
Utilities	Maintain the database.
Reports	Generate information about the build and promote activities, and about the contents of the database.

Interactive dialogs, batch interfaces, and callable services provide access to the functions and capabilities of SCLM. These functions support the routine use of SCLM by:

- Allowing programmers to use the ISPF editor to create and modify software components
- Providing automated draw down and lockout functions without requiring any special customizing to suit a particular installation.

SCLM (Option 10)

Chapter 11. ISPF Object/Action Workplace (Option 11)

Option 11 gives you access to the *ISPF Object/Action Workplace*, or *Workplace*, which combines many of the ISPF functions onto one object-action interface. The idea of object-action is to specify an *object* (such as an ISPF library, data set name, or workstation file) and then specify an *action* to perform upon it. You can specify any of the following objects:

- An ISPF Library—a cataloged partitioned data set (PDS) with a three-level data set name in the project.group.type format.
- A partitioned or sequential data set.
- A VSAM data set for use with the data set actions allocate, delete, or information.
- A DSLIST level for data set list actions, for example, 'YOURID.*' for all data sets beginning with YOURID.
- A workstation file name for use with the actions edit or view.
- A volume serial number for uncataloged data sets to use with actions to retrieve volume information, print volume information, build a DSLIST based on a volume serial number, or as a filter for a DSLIST level.
- Personal data set lists or reference lists for use with action DL (DSLIST) only.

Additionally, Workplace provides ISPF Referral list fields to enable object selection through retrieval from personal lists (pre-packaged lists of data sets which you create) or reference lists (lists of recently referenced data sets which ISPF creates).

You can select an action by making a choice on an action bar or by using a command. Eighty-five ISPF functions are available as workplace actions.

There is a fast path system command for starting the Workplace. Type ISPFWORK on any ISPF command line and you are taken to the Workplace entry panel.

You can display the Workplace in GUI mode as well as standard mode. See “Workstation Connection” on page 44 for information about how to start GUI mode for ISPF. All of the screens that appear in this chapter are shown in their GUI mode.

Selecting Objects

The first step in using the Workplace to perform ISPF functions is to specify the particular object that you want to perform an action on, for example, a sequential data set 'YOURID.SOURCE.DATA'. Object specification takes place on the Workplace entry panel.

Workplace Entry Panel

When you first enter the Workplace, the entry panel that appears is called *ISPF Workplace*. It is possible to display this panel in two distinct modes called views: either the *Library View* or the *Data Set View*.

The Library View panel has the words “Library View” as a heading just above the referral lists in the lower portion of the screen. This view enables you to work with ISPF library concatenations and library lists.

The Data Set View panel has the words “Data Set View” as a heading just above the referral lists in the lower portion of the screen. This view enables you to work

Workplace (Option 11)

with data set lists, sequential files, or single partitioned data sets. You can choose to work with either entry panel view by using the command LISTVIEW, or the function key ChgView (F11) to toggle between the two panels.

Library View

You use the Library View to work with a ISPF library concatenations. The panel that appears in Figure 219 is the Library View entry panel for the Workplace.

ISPF Workplace

File View Options Space SuperC Test Help

Smart Action ISPF Workplace

ISPF Library

Project . . .	KEENE
Group	PRIVATE
Type	TEST
Member	(Blank or pattern for member action list)

ISPF Referral lists for object selection

Library View	Action	#1-8=Retrieve Entry	DL=DSLST	/=Open List
REFLIST . . .		Last 8 Libraries referenced	Dynamic list	
SAMPLE . . .				95/02/01 17:13
End				

Action ==> Scroll ==> CSR

Enter Help Split Exit

Settings PrvObj PrvAct Backward Forward Swap Actions ChgView Cancel

Figure 219. Workplace Entry Panel - Library View (ISRWORK1)

When using this Workplace entry panel, you can select a data set or a group of data sets to work with in one of the following ways:

- Fill in the **ISPF Library** fields. These fields are used the same way as they are on other ISPF panels. You can use the traditional method of selecting a data set by entering its Project, Group, Type, and Member names in the ISPF Library fields. Omitting the Member name gives you a list of members to choose from.
- Select an object or list of objects using **ISPF Referral lists for object retrieval**. See "ISPF Referral Lists for Object Retrieval" on page 355 for more information. You can access personal and reference lists, and then select libraries from these lists.

Data Set View

You use the Data Set View to work with a single data set, a list of data sets, a workstation file, or any action that requires a volume serial.

Note: Catalog, DSLIST, Volume information, Print volume, and Workstation file actions, are only available from the Data Set View.

The panel that appears in Figure 220 on page 355 is the Data Set View entry panel for the Workplace.

ISPF Workplace

File View Options Space SuperC Test Help

Smart Action ISPF Workplace

Data Set, DSLIST Level, or Workstation File

Object Name . . . PRIVATE.PANELS

Volume Serial . . . (For actions that require a volume serial)

ISPF Referral lists for object selection

Data Set View	Action	
REFLIST . . .		#1-30=Retrieve Entry DL=DSLST /=Open List
SAMPLE . . .		Last 30 Data sets referenced Dynamic list

95/02/01 17:13

End

Action ==> Scroll ==> CSR

Enter Help Split Exit Settings PrvObj PrvAct Backward Forward Swap Actions ChgView Cancel

Figure 220. Workplace Entry Panel - Data Set View (ISRWORK)

When using this Workplace entry panel, you can select a data set or a group of data sets to work with in one of the following ways:

- You can use the traditional method of selecting a data set by entering its name in the **Object Name** field. For example, enter 'YOURID.SOURCE.DATA' to act upon a data set on the host, or D:\YOUR.FIL to act upon a workstation file (perhaps to edit it using the PDF editor).
- Select an object or list of objects using **ISPF Referral lists for object retrieval**. You can access personal and reference lists, and select data sets, libraries, workstation files, VSAM files, and data set levels from each list.

ISPF Referral Lists for Object Retrieval

Both views of the ISPF Workplace entry panel enable you to use referral lists. The bottom of the ISPF Workplace panel contains a reference list entry field (REFLIST), followed by a list of personal lists. You can display either referral library lists or referral data set lists, depending on the view you choose.

All data sets and libraries referenced during an ISPF session are appended to the reference lists. You can use the input fields next to the referral lists to access a referral data set in one of the following ways:

- Entering a slash (/) in this field causes the personal data set list or library list (depending on the selected view) to be displayed.
- Type a **DL** in the input field and press Enter. This builds a DSLIST based on entries in the personal data set list, personal library lists, or Reflists.
- Enter a library entry number (from 1 to 8). If you know the list numbers of your libraries, for example, your panels library is number 1, you can type the number in this field and press Enter. ISPF retrieves the respective library entry from the library reference list.
- Enter a data set entry number (from 1 to 30). If you know the order of your data sets, you can type the number in this field and press Enter. ISPF retrieves the respective data set entry from the data set reference list.

Specifying Actions

After you select the object you want to work with, choose the action to perform on it. You can select an action by making a choice on an action bar or by using a command.

Choices on the Workplace Action Bar

The Workplace action bar makes available the following choices.

File

The **File** action bar choice enables you to manipulate files. The pull-down choices for File are:

Choice Description

List... Displays a pop-up menu that enables you to choose either a *member list*, a *data set list* list, a list of *personal data set lists* or a list of *personal library lists*. You can perform any of the File actions except *DSL* against the resulting member list.

Member list

displays a list of members for a partitioned data set. To display a member list:

1. type the library or data set information in the appropriate fields of the Workplace entry panel (library view).
2. specify blank or a pattern for the member name to display a member list.
3. select the **List** action from the **File** action bar choice
4. select **Member list** from the List Action prompt panel.

Note: All member lists displayed by the ISPF Workplace are enhanced member lists, all supported member list actions and commands are available on any member list display.

Data Set list

displays a list of data sets based on a DSLIST level and, optionally, a volume serial number. The data set list initial view can be set from the Workplace Settings panel. To create a data set list:

1. type the data set level in the Object name field on the Workplace entry panel (data set view). If you do not full qualify the data set level (by enclosing it in single quotes), your TSO prefix is set as the first level. Optionally, you can enter a volume to view just the data sets that match the DSLIST level on the volume entered. You can also optionally enter just a volume name to list all data sets on the volume entered.
2. select the **LIST** action from the **File** action bar choice
3. select **Data Set list** from the List Action prompt panel.

Personal Data Set lists

displays a list of your personal data set lists. All valid personal list actions can be performed against any selected personal list. The personal data set list you used most recently is the current active list. The currently active list cannot be directly deleted from the list dialog, however all other list actions are valid. To list your personal data set lists:

1. select the **List** action from the **File** action bar choice

2. select **Personal Data Set List** from the List Action prompt panel. You can perform this action from either view of the Workplace entry panel.

Personal Library lists

displays a list of your personal library lists. All valid personal list actions can be performed against any selected personal list. The personal library list you used most recently is the current active list. The currently active list cannot be directly deleted from the list dialog, however all other list actions are valid. To list your personal library lists:

1. select the **List** action from the **File** action bar choice
2. select **Personal Library List** from the List Action prompt panel. You can perform this action from either view of the Workplace entry panel.

Edit... starts Edit action for a member or a sequential file. The Edit action prompt panel is presented when you choose the **Edit** pull-down choice on the action bar. Select a file type and an editor and press Enter. The Edit function is used to edit a member of a partitioned data set, a sequential data set, or a workstation file.

Type of File

Select the type of file you want to edit.

1. Host File

Edit a host file using ISPF Edit or a workstation-defined editor. The selection of host or workstation editors is based on the **Editor Choice** option setting on the Edit Entry panel. To start the member list function, enter a pattern or leave the member field blank on the Workplace entry panel. To edit a single member on the host :

1. type the library or data set information in the appropriate fields of the Workplace entry panel.
2. type the member name in the member field (for library view) or in parentheses after the data set name (for data set view).
3. select **Edit** under the **File** action bar choice
4. select **Host File** and **ISPF Editor** on the Edit Action prompt panel.

To edit a single member on the workstation :

1. type the library or data set information in the appropriate fields of the Workplace entry panel.
2. type the member name in the member field (for library view) or in parentheses after the data set name (for data set view).
3. select **Edit** under the **File** action bar choice
4. select **Host File** and **Workstation Editor** on the Edit Action prompt panel.

2. Workstation File

To edit a workstation file using the ISPF editor:

1. type the file path and name in the Object name field on the Workstation entry panel (data set view)
2. select **Edit** from the **File** action bar choice
3. select **Workstation File** and **ISPF Editor** from the Edit Action prompt panel.

Workplace (Option 11)

To edit a workstation file using a workstation editor:

1. type the file path and name in the Object name field on the Workstation entry panel (data set view)
2. select **Edit** from the **File** action bar choice
3. select **Workstation File** and **Workstation Editor** from the Edit Action prompt panel.

2. Editor Choice

1. ISPF Editor

Selects the ISPF editor.

2. Workstation Editor

Selects the workstation editor.

View... Starts View action for a member or a sequential file. The View prompt panel is presented when you choose the **View** pull-down choice on the **File** action bar. The View function is used to view a member of a partitioned data set, a sequential data set, or a workstation file.

Type of File

Select the type of file you want to view.

1. Host File

View a host file using ISPF View or a workstation-defined editor/browser. The view mechanism used is based on the *View Choice* setting found on the View entry panel. To enter the member list function, type a pattern or leave the member field blank on the Workstation entry panel. To view a single member on the host:

1. type the library or data set information in the appropriate fields on the Workplace entry panel.
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select **View** from the **File** action bar choice
4. select **Host File** and **ISPF View** from the View Action prompt panel.

To view a single member on the workstation:

1. type the library or data set information in the appropriate fields on the Workplace entry panel.
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select **View** from the **File** action bar choice
4. select **Host File** and **Workstation View** from the View Action prompt panel.

2. Workstation File

To view a workstation file using ISPF View:

1. type the file path and name in the Object name field of the Workstation entry panel (data set view)
2. select **View** from the **File** action bar choice
3. select **Workstation File** and **ISPF View** from the View Action prompt panel.

To view a workstation file using a workstation editor or browser:

1. type the file path and name in the Object name field of the Workstation entry panel (data set view)
2. select **View** from the **File** action bar choice
3. select **Workstation File** and **Workstation View** from the View Action prompt panel.

2. View Choice

1. ISPF View

Selects the ISPF view function.

2. Workstation View

Selects the workstation editor or browser.

Browse...

Starts Browse action for a member or a sequential file.

If you do not specify a member name or if you specify a pattern and the specified data set is a PDS, a member list is displayed. Select a member to Browse by typing **s** next to the member name. To browse a single member:

1. type the library or data set information in the appropriate fields of the ISPF Workplace panel
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select **Browse** from the **File** action bar choice.

Delete...

Displays a pop-up prompt window with *member* or *data set* as the choices.

If you do not specify a member name or if you specify a pattern and the specified data set is a PDS, a member list is displayed. Select a member to Delete by typing **s** next to the member name.

To delete a single member:

1. type the library or data set information in the appropriate fields of the ISPF Workplace panel
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select Delete under the **File** action bar choice for member delete.

To delete a PDS or a sequential data set:

1. enter the data set name in the Object name field, or enter a library in the ISPF Library field on the Workplace panel.
2. select Delete under the **File** action bar choice for data set delete.

Rename...

Displays a pop-up prompt window with *member* or *data set* as the choices.

If you do not specify a member name or if you specify a pattern and the specified data set is a PDS, a member list is displayed. Select a member to Rename by typing **s** next to the member name.

To rename a single member:

1. type the library or data set information in the appropriate fields of the ISPF Workplace panel
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select Rename under the **File** action bar choice for member rename.

To rename a PDS or a sequential data set:

Workplace (Option 11)

1. type the data set name in the Object name field, or type a library in the ISPF Library field on the Workplace panel.
2. select Rename under the **File** action bar choice for data set rename.

For more information, see “Rename” on page 373.

Move Starts the move action for a member or a sequential file. A Move entry panel is presented.

If you do not specify a member name or if you specify a pattern and the specified data set is a PDS, a member list is displayed. Select a member to move by typing **s** next to the member name.

If you specify an asterisk (*) as the member name, all members of the PDS are moved without a member list being displayed.

Note: You can change your **Workstation Settings** so that you can move, copy, or reset all members that match a certain pattern, not just an asterisk. See “Changing Workplace Settings” on page 377 for more information.

To move a single member:

1. type the library or data set information in the appropriate fields of the ISPF Workplace panel
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select Move from the **File** action bar choice.

For more information, see “Move or Copy” on page 372.

Copy Starts the copy action for a member or a sequential file. A Copy entry panel is presented.

If you do not specify a member name or if you specify a pattern, a member list is displayed. Select a member to copy by typing **s** next to the member name.

If you specify an asterisk (*) as the member name, all members of the PDS are copied without a member list being displayed.

Note: You can change your **Workstation Settings** so that you can move, copy, or reset all members that match a certain pattern, not just an asterisk. See “Changing Workplace Settings” on page 377 for more information.

To copy a single member:

1. type the library or data set information in the appropriate fields of the ISPF Workplace panel
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select **Copy** from the **File** action bar choice.

For more information, see “Move or Copy” on page 372.

Reset...

Starts reset action for a member. A Reset prompt panel is presented for the member.

Workplace (Option 11)

If you do not specify a member name or if you specify a pattern and the specified data set is a PDS, a member list is displayed. Select a member to reset by typing **s** next to the member name.

If you specify an asterisk (*) as the member name, all members of the PDS are reset without a member list being displayed.

Note: You can change your **Workstation Settings** so that you can move, copy, or reset all members that match a certain pattern, not just an asterisk. See “Changing Workplace Settings” on page 377 for more information.

To reset a single member:

1. type the library or data set information in the appropriate fields of the ISPF Workplace panel
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select **Reset** from the **File** action bar choice.

For more information, see “Resetting Member Statistics” on page 368.

Open is defined on the Workplace Settings panel, making it a user customizable action. After you set this action, it is performed automatically each time you open a member. The Open action can be set to the following actions:

User Any TSO command, REXX exec, or CLIST set by the **Open Command** field on the Workplace Settings panel.

E	Edit
V	View
B	Browse
D	Delete member
R	Rename member
M	Move
C	Copy
G	Reset
P	Print member
J	Submit
T	TSO command action

To open a single member:

1. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
2. select **Open** from the **File** action bar choice. When you press the ENTER key, the action for open runs against the member, or a member list is displayed. See “Changing Workplace Settings” on page 377 for more information.

Submit

Submits the member or sequential file to TSO for job execution.

If you do not specify a member name or if you specify a pattern and the specified data set is a PDS, a member list is displayed. Select a member to submit by typing **s** next to the member name.

To submit a single member, fill in the following fields of the ISPF Workplace panel:

1. type the library or data set information in the appropriate fields.
2. type the member name in the member field (for ISPF library view) or in parentheses after data set name (for data set view).

Workplace (Option 11)

3. select **Submit** from the **File** action bar choice.

Print... The Print selection enables you to print information. The pull-down choices on the Print action prompt panel are:

Data Set

prints the entire data set. To print a data set:

1. type the data set name in the Object name field (for the data set view) or enter an ISPF library name in the ISPF Library fields (for the library view).
2. select the **Print** action from the **File** action bar choice
3. select **Data set** from the Print Action prompt panel.

Data Set index

prints the data set index for the selected data set. To print a data set index:

1. type the data set name in the Object name field or type an ISPF library name in the ISPF Library fields.
2. select the **Print** action from the **File** action bar choice
3. select **Data Set index** from the Print Action prompt panel.

Data Set List

prints the list of data sets for the selected data set name level. To print a data set list:

1. type a data set level, or optionally a volume serial, in the appropriate fields on the ISPF Workplace panel
2. select **Print** from the **File** action bar choice
3. select **Data set list** from the Print Action prompt panel.

VTOC prints the VTOC information for the selected volume. To print a VTOC summary:

1. type a volume serial in the proper field on the ISPF Workplace panel
2. select **Print** from the **File** action bar choice
3. select **VTOC** from the Print Action prompt panel.

Member

prints the selected member. To print a member:

1. type the data set name in the Object name field or type an ISPF library name in the ISPF Library fields.
2. select the **Print** action from the **File** action bar choice
3. select **Member** from the Print Action prompt panel.

Command...

Enables you to enter TSO, Workstation, or ISPF commands. You are prompted to choose between types of commands. The pull-down choices on the Command prompt are:

TSO Cmd

The TSO Cmd action is used to run a TSO command, passing the data set and member name and any additional parameters to the TSO command entered. To run a TSO command against a single member, fill in the following fields of the ISPF Workplace panel:

1. type the library or data set information in the appropriate fields.
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select **Command** from the **File** action bar choice
4. select **TSO** from the Command Action prompt panel.

WS Cmd

The WS Cmd action is used to run a WS command, passing the data set and member name and any additional parameters to the WS command entered.

To run a WS command against a single member, fill in the following fields of the ISPF Workplace panel:

1. type the library or data set information in the appropriate fields.
2. type the member name in the member field (for ISPF library view) or in parentheses after the data set name (for data set view).
3. select **Command** from the **File** action bar choice
4. select **WS command** from the Command Action prompt panel.

Note: The ISPF Client/Server must be connected to run the WS command.

ISPF Command Shell

The ISPF command shell option enables TSO commands, CLISTs, and REXX execs to be run under ISPF. You can enter the TSO commands, CLISTs, and REXX execs in the command input field of any panel.

ISPF also enables Workstation commands to be entered in the command input field of any panel.

You can enter a long command that wraps to the next line if you want to. For more information about the ISPF Command Shell, see "ISPF Command Shell" on page 371.

ISPF Command Table

The command table utility allows you to create or change application command tables.

A command table contains the specification of general commands that can be entered from any panel during the execution of an application. Command tables are identified by application id, and are maintained in the ISPF table input library.

Exit ends the Workplace, returning to the primary option panel.

View

The View action bar choice displays the object views that are available to you. The currently selected view is unavailable.

The pull-down choices for View are:

Choice	Description
Data Set View	<p>Changes the current view to reference data set list, personal data set lists, and Object name view.</p> <p>To change to the data set view:</p> <ol style="list-style-type: none"> 1. select the View action bar choice 2. select Data Set View from the pull-down menu.
Library View	<p>Changes the current view to reference library list, personal library lists, and ISPF Library view.</p> <p>To change to the ISPF Library view:</p> <ol style="list-style-type: none"> 1. select the View action bar choice

Workplace (Option 11)

	2. select Library View from the pull-down menu.
By name	Changes the current view of the personal list by sorting on the name field.
By description	Changes the current view of the personal list by sorting on the description field.
By created	Changes the current view of the personal list by sorting on the created field.
By referenced	Changes the current view of the personal list by sorting on the referenced field.

Options

The Options action bar choice displays the settings available. The pull-down choices for Options are:

Choice	Description
Workplace Settings...	Displays the Workplace Settings panel. See “Changing Workplace Settings” on page 377 for more information.
ISPF Settings	Displays the ISPF Settings panel. See “Chapter 1. Settings (Option 0)” on page 5 for more information.
CUA Attributes...	Starts the ISPF CUA Attribute Change Utility dialog. See “CUA Attributes” on page 40 for more information.
Keylists...	Starts the ISPF Keylist Utility dialog. See “Working with Function Keys and Keylists (The Function Keys Action Bar Choice)” on page 21 for more information.
Point-and-Shoot...	Starts the ISPF CUA Attribute Change Utility dialog indexed to the point-and-shoot entry. See “CUA Attributes” on page 40 for more information.
Colors...	Starts the ISPF Global Color Change Utility dialog. See “Changing Default Colors (The Colors Action Bar Choice)” on page 35 for more information.

Space

The Space action bar choice enables you to create and maintain data sets. The pull-down choices available for Space are:

Choice	Description
Allocate...	<p>Displays a pop-up menu for the allocate action. The choices on the prompt are:</p> <p>Data Set</p> <p>The allocate action is used to allocate a partitioned or sequential data set. To allocate a data set:</p> <ol style="list-style-type: none">1. type the data set name in the Object name field or type an ISPF library name in the ISPF Library fields.2. select the Allocate action from the Space action bar choice

3. select **Data Set** from the Allocate Action prompt panel.

Enhanced Data Set

The enhanced allocate action is used to allocate an SMS-managed partitioned or sequential data set. To allocate an SMS data set:

1. type the data set name in the Object name field or enter an ISPF library name in the ISPF Library fields.
2. select the **Allocate** action from the **Space** action bar choice
3. select **Enhanced Data Set** from the Allocate Action prompt panel.

VSAM Data Set

The VSAM action is used to define, delete, or retrieve information for a VSAM data set. To define, delete, or retrieve information for a VSAM data set:

1. type the VSAM data set name in the Object name field or enter an ISPF library name in the ISPF Library fields.
2. select the **Allocate** action from the **Space** action bar choice
3. select **VSAM Data Set** from the Allocate Action prompt panel.

Compress

The Compress action is used to recover unused space in a partitioned or sequential data set. To compress a data set:

1. type the data set name in the Object name field or type an ISPF library name in the ISPF Library fields.
2. select the **Compress** action from the **Space** action bar choice.

Catalog

The Catalog action is used to catalog a partitioned or sequential data set on a direct access device. To catalog a data set:

1. type the data set name in the Object name field.
2. type the volume name in the volume field.
3. Select the **Catalog** action from the **Space** action bar choice.

Note: You cannot catalog an SMS managed data set.

Uncatalog

The Uncatalog action is used to uncatalog a partitioned or sequential data set from a direct access device. To uncatalog a data set:

1. type the data set name in the Object name field.
2. select the **Uncatalog** action from the **Space** action bar choice.

Note: You cannot uncatalog an SMS managed data set.

Workplace (Option 11)

A confirmation dialog appears if specified in the Workplace Settings panel. See “Changing Workplace Settings” on page 377 for more information.

Information...

The Data Set Information action is used to retrieve information about a partitioned or sequential data set. To retrieve data set information:

1. type the data set name in the Object name field or type an ISPF library name in the ISPF Library fields.
2. select **Information** from the **Space** action bar choice
3. select one of the following choices from the Information Action prompt panel:

Data Set Long...

displays information about the selected data set.

Data Set Short...

displays a subset of information about the selected data set.

VTOC summary...

displays VTOC information about the selected volume. You must type the volume serial of the VTOC in the volume serial field of the Workplace entry panel.

SuperC

The SuperC action bar choice gives you access to SuperC compare and search dialogs for your data sets. The data set you specify on the Workplace panel is automatically filled in for you in the Superc dialog you choose. For more information, see “SuperC Utility (Option 3.12)” on page 192.

The SuperC pull-down choices are:

Choice

Description

SuperC

Compare two data sets. To SuperC compare two data sets:

1. Type the first data set name in the Object name field or type an ISPF library name in the ISPF Library fields.
2. Select the **SuperC** action from the **SuperC** action bar choice. The SuperC Compare Utility— New Data Set Specification panel appears with the data set information entered in it. Make sure the panel is filled in the way you want it to be.
3. Press Enter to display the *Old* SuperC comparison panel, and fill in the panel.
4. Press Enter again to submit the comparison.

For more information, see “SuperC Utility (Option 3.12)” on page 192.

SuperCE	Compare two data sets using extended options. For more information, see “SuperCE Utility (Option 3.13)” on page 202.
Search-For	<p>Search data sets for strings of data. To SuperC search for strings of data:</p> <ol style="list-style-type: none"> 1. Type the data set name in the Object name field or type an ISPF library name in the ISPF Library fields. 2. Select the Search-For action from the SuperC action bar choice. The Search-For Utility panel appears with the data set information entered in it. Make sure the panel is filled in the way you want it to be. <p>For more information, see “Search-For Utility (Option 3.14)” on page 215.</p>
Search-ForE	Search a data set using extended options. For more information, see “Search-ForE Utility (Option 3.15)” on page 221.

Test

The Test action bar choice gives you access to the ISPF services that help you test dialogs, such as “Chapter 8. Dialog Test (Option 7)” on page 297. For more information, refer to the *ISPF Dialog Developer’s Guide and Reference*, and the *ISPF Edit and Edit Macros* manual.

The Test pull-down choices are:

Choice	Description
Functions...	Displays the Dialog Test Function/Selection panel. Select the Functions action from the Test action bar choice. For more information, see “Functions (Option 7.1)” on page 305.
Panels...	Displays the Dialog Test Display panel. Select the Panels action from the Test action bar choice. For more information, see “Panels (Option 7.2)” on page 308.
Variables...	Displays the Dialog Test Variables panel. Select the Variables action from the Test action bar choice. For more information, see “Variables (Option 7.3)” on page 311.
Tables...	Displays the Dialog Test Tables panel. Select the Tables action from the Test action bar choice. For more information, see “Tables (Option 7.4)” on page 315.
Log	Displays the ISPF Transaction Log panel. Select the Log action from the Test action bar choice. For more information, see “Log (Option 7.5)” on page 328.
Services...	Displays the Invoke Dialog Service panel. Select the Services action from the Test action bar choice. For more information, see “Dialog Services (Option 7.6)” on page 330.

Workplace (Option 11)

Traces...	Displays the Dialog Test Traces panel. Select the Traces action from the Test action bar choice. For more information, see “Traces (Option 7.7)” on page 333.
Break Points...	Displays the Dialog Test Breakpoints panel. Select the Break Points action from the Test action bar choice. For more information, see “Breakpoints (Option 7.8)” on page 337.
Dialog Test...	Displays the Dialog Test Primary Option panel. Select the Dialog Test action from the Test action bar choice. For more information, see “Chapter 8. Dialog Test (Option 7)” on page 297.
Dialog Test appl ID...	Displays the Dialog Test Application ID panel for changing the Dialog Test application ID. Select the Dialog Test appl ID action from the Test action bar choice.

Help

The Help action bar choice provides access to the program tutorials.

Actions That Require Prompt Windows for More Information

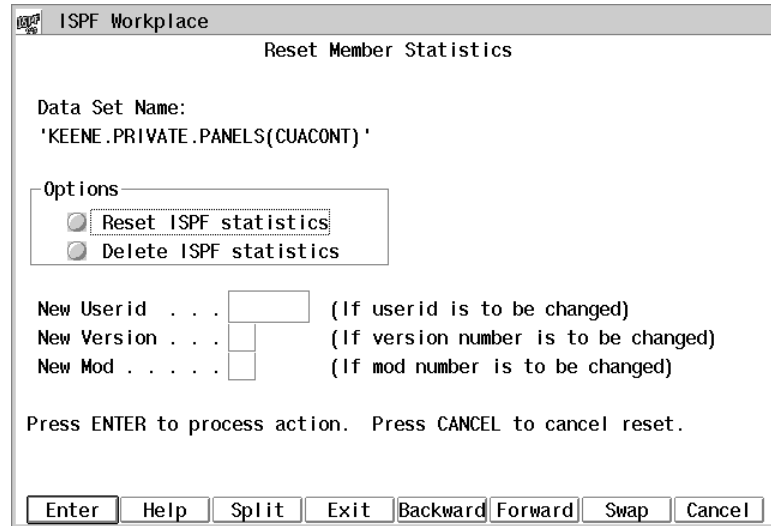
Some actions that you call from the Workplace require additional information. You provide this information through the use of pop-up prompt windows. Some common actions of this type are:

- Resetting member statistics
- Using TSO commands
- Using WS commands
- Using the ISPF command shell
- Moving or copying data
- Renaming data sets.

Following are the actions and the pop-up windows that accompany each one.

Resetting Member Statistics

Figure 221 on page 369 shows the pop-up prompt window that appears when you choose **Reset...** from the **File** action bar, after you choose a member to work with.



ISPF Workplace

Reset Member Statistics

Data Set Name:
'KEENE.PRIVATE.PANELS(CUACONT)'

Options

☒ Reset ISPF statistics
☐ Delete ISPF statistics

New Userid . . . (If userid is to be changed)
New Version . . . (If version number is to be changed)
New Mod (If mod number is to be changed)

Press ENTER to process action. Press CANCEL to cancel reset.

Enter Help Split Exit Backward Forward Swap Cancel

Figure 221. Reset Statistics panel

For more information about how the Reset statistics option works, see “Reset ISPF Statistics Utility (Option 3.5)” on page 155. You can set the following items from this window:

Options

select 1 to Reset ISPF statistics, or 2 to Delete ISPF statistics

New Userid

Sets the **ID** field in the statistics. If you want to change the ID the statistics are kept under, enter the new ID here. If you do not specify a new version number, this field is required to be filled in.

New Version

Enter a number here is you want to change the version number. This field is required if you do not enter a new userid. It is ignored if you have chosen the delete action.

New Mod

Use a slash (/) to select this option. Deselect this option if you do not want to reset the modification level. A new version number is required to reset the modification level.

TSO Command

Figure 222 on page 370 shows the pop-up prompt window that appears when you choose **Command**, from the **File** action bar choice, then select **TSO Command** from the Command Action prompt panel.

Workplace (Option 11)

ISPF Workplace

TSO Command Action

The "/" character can be used within the command string to represent the following fully qualified and quoted data set name:
'KEENE.PRIVATE.PANELS(CUAFLH2)'

Enter TSO Command and any additional parameters as needed: _____

Press ENTER to execute command, press CANCEL to cancel action.

Enter Help Split Exit Backward Forward Swap Cancel

Figure 222. TSO Command panel

You can set the following items from this window:

TSO Command

The name of the TSO command you want to use. The command name can be followed by command parameters with the / character appearing anywhere within the parameter string.

WS Command

Figure 223 shows the pop-up prompt window that appears when you choose **Command**, from the **File** action bar choice, then select **WS Command** from the Command Action prompt panel. You must have a workstation connection in place in order to use WS commands.

ISPF Workplace

WS Command Action

The "/" character can be used within the command string to represent the following fully qualified, unquoted data set name:
KEENE.PRIVATE.PANELS(CUAINF0)

Enter Workstation Command and any additional parameters as needed: _____

Press ENTER to execute command, press CANCEL to cancel action.

Enter Help Split Exit Backward Forward Swap Cancel

Figure 223. WS Command panel

You can set the following items from this window:

WS Command

The name of the WS command you want to use. The command name can

be followed by command parameters with the / character appearing anywhere within the parameter string.

ISPF Command Shell

Figure 224 shows the pop-up prompt window that appears when you enter the ISPF command shell. To get to this window, choose **Command** from the File action bar choice, then choose **ISPF Command Shell** on the Command Action prompt panel.

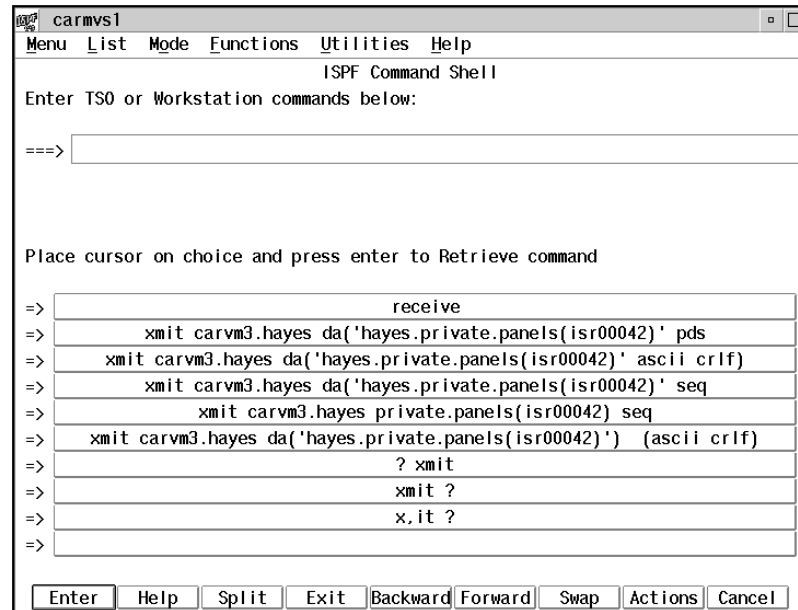


Figure 224. ISPF Command Shell panel

The ISPF Command Shell option enables you to run TSO commands, CLISTs, and REXX execs under ISPF. This panel has one input field. Type the command and its parameters into the input field, leaving at least one space between the command name and the first parameter. The input field continues for two full lines below the start of the input field. The maximum number of characters that you can enter is 234. For example:

Enter TSO or Work Station commands below

```
===> SEND 'THIS MESSAGE DEMONSTRATES THAT A TSO COMMAND ENTERED UNDER
ISPF CAN EXCEED ONE LINE ON THE 3270' USER(ALICE)
```

You can also enter ISPF commands, such as END or RETURN, in this field.

Note: If you enter a HELP or CANCEL command, it is interpreted as the ISPF help or cancel command. To issue TSO help or TSO cancel, enter: ===> TSO HELP xxxxx ===> TSO CANCEL xxxxx

The ISPF command shell option enables you to enter most TSO commands under ISPF. Following is a list of commands that are not supported:

- LOGON
- LOGOFF
- ISPSTART, PDF, and ISPF
- TEST
- Commands that you are restricted from using by TSO or PCF

Workplace (Option 11)

- Commands requiring large parameter lists (234 characters is the maximum allowed, including command name)

You can run command procedures under ISPF, subject to the following restrictions:

- CLISTs and execs must not invoke restricted commands listed previously
- TERMIN command procedure statements are not supported

These restrictions also apply to commands entered from other panels.

After you type a command in the input field, press ENTER to start the command. If you are not operating in Session Manager mode, the cursor is positioned below the command input field. Line-at-a-time I/O from the command, if any, starts at the cursor position. When the command finishes, three asterisks (***) may appear on the screen. To return to ISPF full screen mode, press ENTER.

The ISPF command shell panel is then redisplayed with the command you entered displayed in the command list (unless you entered the TSO or WS prefix, or List mode is set to update off).

Move or Copy

Figure 225 shows the pop-up prompt window that appears when you choose **Move...** from the **File** action bar, after you choose a member to work with. The panel that appears when you choose **Copy...** is similar to this one.

ISPF Workplace
RefList Help

MOVE Entry Panel

More: +

CURRENT from data set: 'KEENE.PRIVATE.PANELS(CUAF1H1)'

To Library
Project . . . KEENE
Group . . . PRIVATE
Type . . . TEST

Confirm Replace
☐ Replace like-named members

To Other Data Set Name
Data Set Name . . .
Volume Serial . . . (If not cataloged)

NEW member name . . . (Blank unless member to be renamed)

Options

Sequential Disposition	Pack Option	SCLM Setting
<input type="radio"/> Mod	<input checked="" type="radio"/> Default	<input type="radio"/> SCLM
<input checked="" type="radio"/> Old	<input type="radio"/> Pack	<input type="radio"/> Non-SCLM
		<input checked="" type="radio"/> As is

Command ==>

Enter Help Split Exit Backward Forward Swap Cancel

Figure 225. Move panel

For more information about the Move/Copy utility, see “Move/Copy Utility (Option 3.3)” on page 115. You can set the following items from this window:

To Library

the library to which you want to move or copy the selected data

To Other Data Set Name

the data set to which you want to move or copy the selected data

NEW member name

if the “to” and “from” data sets are the same, you can rename the member here.

Sequential disposition

select 1 if Mod, 2 if Old

- 1 Mod adds new data at the end of data currently contained in the data set.
- 2 Old begins placing new data at the beginning of the data set, writing over existing data.

Pack option

Indicates how you want the data to be stored in the “to” data set.

- 1 data set is packed according to your default settings
- 2 data set is packed

SCLM setting

Indicates how you want the data to be stored in the “to” data set.

- 1 SCLM
- 2 Non-SCLM
- 3 As is

Rename

Figure 226 shows the pop-up prompt window that appears when you choose **Rename...** from the **File** action bar, after you choose a member to work with.

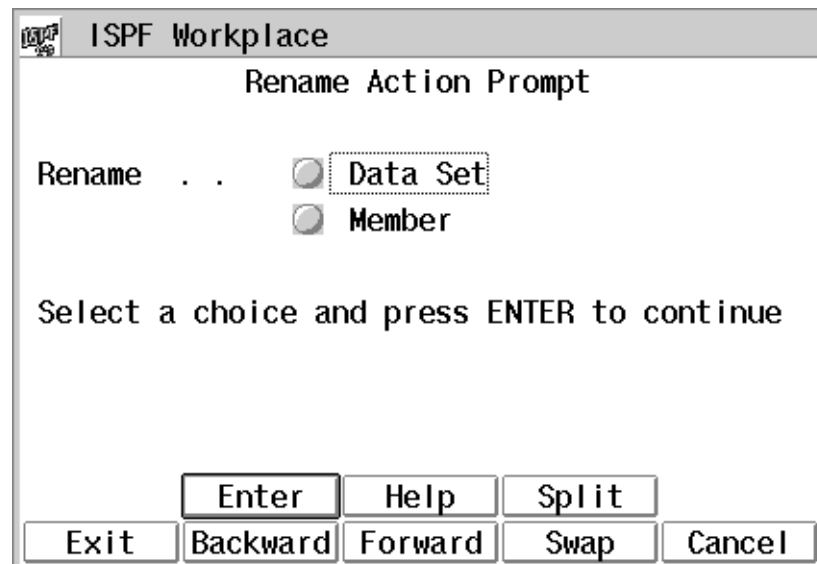
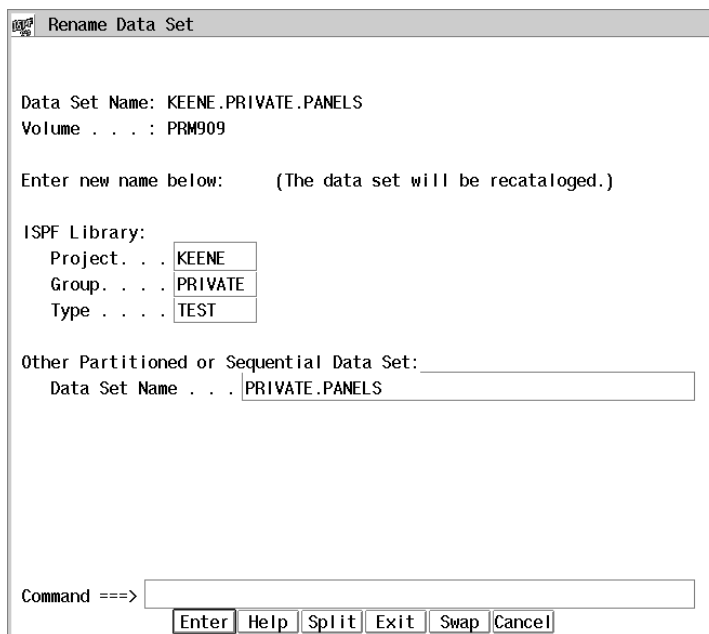


Figure 226. Rename prompt panel

You choose to rename either a data set or a member from this panel. If you choose data set, the panel in Figure 227 on page 374 appears.

Workplace (Option 11)



Rename Data Set

Data Set Name: KEENE.PRIVATE.PANELS
Volume . . . : PRM909

Enter new name below: (The data set will be recataloged.)

ISPF Library:

Project . . .	KEENE
Group . . .	PRIVATE
Type . . .	TEST

Other Partitioned or Sequential Data Set:

Data Set Name . . . PRIVATE.PANELS

Command ==>

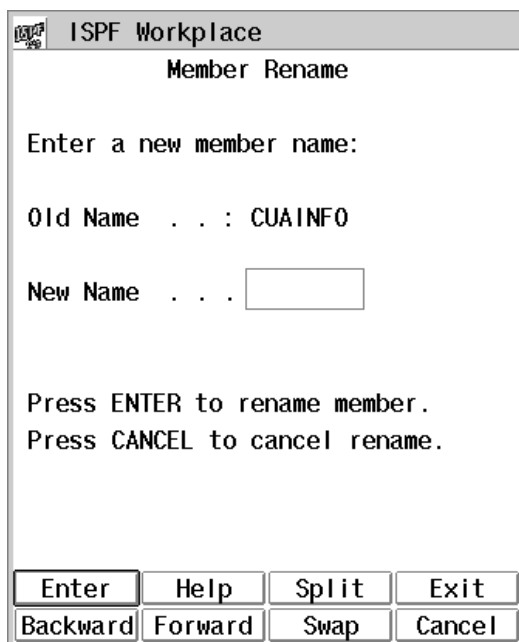
Figure 227. Rename data set panel

You can set the following items from this window:

New name

the name that you want to use for the renamed data set

If you choose member, the panel in Figure 228 appears.



ISPF Workplace

Member Rename

Enter a new member name:

Old Name . . . : CUAINFO

New Name . . .

Press ENTER to rename member.
Press CANCEL to cancel rename.

Figure 228. Rename member panel

You can set the following items from this window:

New name

the name that you want to use for the renamed member

Commands

You can use primary commands in the command area (Action line) of the Workplace entry panels.

You must be connected to the workstation to use any workstation file actions. You can configure your workstation editor choice by selecting the *Workstation* action bar from the Edit or View entry prompt panel or from the Workplace Settings panel.

Table 24. Workstation Commands

Command	Description	Valid For:
A	allocate	data sets
ACTBAR or NOACTBAR	display or do not display action bar on panel	action prompt
AP	allocate	action prompt
B	Browse	members and non-PDS data sets
C	Copy	members and non-PDS data sets
COLOR	global color change	action prompt
CP	command	action prompt
CUAATTR	CUA attributes	action prompt
D	Delete	members and non-PDS data sets
DF	delete	data sets
DL	DSLST	data set name level
DP	delete	action prompt
DVT	VTOC summary	data summary
E	Edit	members and non-PDS data sets
EP	edit	action prompt
G	reset member statistics	members
I	full information	data sets
ICS	ISPF command shell	action prompt
ICT	ISPF command table	action prompt
IP	information	action prompt
J	Submit	members and non-PDS data sets
K	catalog	data sets
KEYLIST	keylist utility	action prompt
L	print data set	data sets
LOCATE, LOC, or L	Find a specified referral list in the scrollable display of referral lists	referral lists
LP	list	action prompt
LV or LISTVIEW	list view	action prompt
M	Move	members and non-PDS data sets

Workplace (Option 11)

Table 24. Workstation Commands (continued)

Command	Description	Valid For:
ML	Member list	partitioned data sets
N	rename	data sets
O	Open	members and non-PDS data sets
OPD	personal data set lists	referral lists
OPL	personal library lists	referral lists
P	Print	members and non-PDS data sets
PDL	Print data set list	data sets
PP	print	action prompt
PSCOLOR	point and shoot	action prompt
PVT	Print VTOC information	data sets
Q	VSAM	data sets
R	Rename	members and non-PDS data sets
RP	rename	action prompt
S	short information	data sets
SC	SuperC	data sets
SCE	SuperC extended	data sets
SELECT, SEL, or S	Select a specified referral list in the scrollable display of referral lists	referral lists
SETTINGS	ISPF settings	action prompt
SF	SearchFor	data sets
SFE	SearchFor extended	data sets
T	TSO command	members and non-PDS data sets
U	uncatalog	data sets
V	View	members and non-PDS data sets
VP	view	action prompt
W	WS command	members and non-PDS data sets
WE	workstation file, edit on host	workstation files
WEW	workstation file, edit on workstation	workstation file
WPSET	workstation settings	action prompt
WV	workstation file, view on host	workstation files
WVW	workstation file, view on workstation	workstation files
X	print data set index	data sets
Y	allocate SMS (enhanced)	data sets
Z	compress	data sets

Table 24. Workstation Commands (continued)

Command	Description	Valid For:
= (equal sign)	Repeat last command. If no previous action, <i>view</i> is the default.	members and non-PDS data sets

Default CUA Function Key Settings

Table 25 shows how the function keys are defined for the main Workplace panel when the mode is set to keylist ON and function keys are set to primary LOWER.

Table 25. Workplace Function Key Settings

Key	Action	Description:
F1	Help	Workplace help
F2	Split	Split screen
F3	Exit	Exit Workplace
F4	Settings	ISPF Workplace settings
F5	PrvObj	Recall last object
F6	PrvAct	Repeat last action
F7	Backward	Scroll up Reflist
F8	Forward	Scroll down Reflist
F9	Swap	Swap screen
F10	Actions	Cursor to action bar
F11	ChgView	Change Workplace view
F12	Cancel	Exit Workplace
F13	Help	Help
F14	Split	Split
F15	End	End
F16	Return	Return
F17	Rfind	Repeat find
F18	Rchange	Repeat change
F19	Up	Up (Scroll up)
F20	Down	Down (Scroll down)
F21	Swap	Swap
F22	Left	Left (Scroll left)
F23	Right	Right (Scroll right)
F24	Cretriev	Cursor/retrieve

Changing Workplace Settings

Figure 229 on page 378 shows the pop-up prompt window that appears when you choose the **Workplace Settings...** pull-down from the **Options** choice on the Workplace action bar. You can also start this function by typing **WPSET** on the command line and hitting enter. The workplace settings determine how your particular workplace behaves for various functions.

Workplace (Option 11)

ISPF Workplace
File Defaults Colors Workstation Help

ISPF Workplace Settings Main

General Options

Check box to select option

☐ Display Edit/View entry panel

☒ Automatically Update reference

☒ Keep member field value

☒ Member List for M, C, G actions

☒ Show Status for M, C, G actions

☒ Confirm Member delete

☒ Confirm Data Set delete

☒ Show Workplace Action Bar

☐ Frame ISPF Personal list area

☒ Smart Action Retrieve Entry

View Options

Data Set List View

☒ Volume

☐ Space

☐ Attrib

☐ Total

Member List View

☒ Standard

☐ Extended

Reflist Frame Char

☐ X'6A'

☒ X'4F'

Press EXIT to save settings. Press CANCEL to cancel any changes.

	Enter	F1=HELP	F2=SPLIT	
F3=END	F4=RETURN	F5=RFIND	F6=RCHANGE	F7=UP
F8=DOWN	F9=SWAP	F10=LEFT	F11=RIGHT	F12=RETRIEVE

Figure 229. Workplace Settings panel (ISRUSETM)

You can set the following items from this window:

Display Edit/View entry panel

when selected, causes the Edit/View prompt panel to appear before you can start an edit or view action for a sequential data set. If you want to display a member list, the prompt panel is only displayed if a slash (/) is entered in the Prompt field of the member list.

The default for this setting is *selected*.

Automatically Update Reference List

when selected, specifies that any data set or library, or both, is added to the respective reference list.

The default for this setting is *selected*.

Keep member field value

when selected, specifies that the member name field for ISPF Library is not to be cleared upon return from a library action.

The default for this setting is *selected*.

List member for M,C,G actions

when selected, specifies that the actions Move, Copy, and Reset result in a member list. When not selected, these actions act upon a member pattern as a single object.

The default for this setting is *selected*.

Show Status for M,C,G actions

when selected, displays a status panel for the actions Move, Copy, and Reset. When not selected, no status panel is displayed.

The default for this setting is *selected*.

Confirm Member delete

when selected, specifies that the delete confirmation panel is displayed before a member is deleted.

The default for this setting is *selected*.

Confirm Data Set delete

when selected, specifies that the delete confirmation panel is displayed before a data set is deleted.

The default for this setting is *selected*.

Show Workplace Action bar

when selected, specifies that the action bar appears on the workplace panels.

The default for this setting is *selected*.

Frame ISPF Referral list area

when selected, specifies that the ISPF referral list area be framed, using the character specified in the **Reflist Frame Char** field.

Smart Action Retrieve Entry

when selected, specifies that ISPF executes the smart action option against the retrieved data set.

View Options

specifies how to display the data set list

volume

displays data set list with a volume view

space

displays data set list with a space view

attrib

displays data set list with an attribute view

total

displays data set list in total view

Member List View

specifies how to display the member list

standard

displays a member list with a 1-character command entry field

extended

displays a member list with an 8-character command entry field

Reflist Frame Char

the character used to frame the ISPF referral list area on your workstation panels.

Workplace Settings Panel Action Bar

The following action bar choices appear on the Workplace Settings panel.

File the file pull-downs give you the options to either cancel or exit the current file.

Defaults

you can choose the default enter or open actions from these pull- downs:

Default Enter action

You can select a default action to perform automatically whenever you do an *Enter* action. The available actions are:

- Smart Action

Workplace (Option 11)

The Smart Action enables ISPF to choose the action needed based on the characteristics of the object you are using. ISPF chooses the appropriate action according to the following rules:

Object type

Action selected by ISPF

ISPF Library

Member list

Partitioned Data Set

Member list

Pattern containing "*" or "%"

Data Set List

Volume (with no object name)

Data Set List

Member Object

User selectable *

Sequential Data Set

User selectable *

Workstation File

User selectable *

* Use the **Smart Action** action bar choice to select the action for member objects, sequential data sets and workstation files.

- Member List
- Data Set List
- Edit
- View
- Browse
- Rename member
- Move
- Copy
- Reset Stats
- Open
- Repeat action

Default Open action

You can select a default action to perform automatically whenever you do an *Open* action from the Workplace or workplace member lists. The available actions are:

- User command (a user defined command)
- Edit
- View
- Browse
- Delete member
- Rename member
- Move
- Copy
- Reset member
- Print member
- WS Cmd
- TSO Cmd

Colors you can choose the colors for the member list or the data set list from this action bar.

Workstation

you can connect your host and workstation with these choices:

1. Configure ISPF Workstation Tool Integration...
2. ISPF C/S Install...

Help provides general workplace settings help, and default enter and open help.

Workplace Example Scenario

The following scenario illustrates some of the advantages provided by the ISPF Workplace function. To provide you with a reference point of view, the scenario includes points on how you can accomplish the same task using ISPF in the traditional way.

For this example, say that your task is to:

1. Copy a sequential data set into a member of a concatenated ISPF Library
2. SuperC compare it to another member
3. Rename the member
4. Change the Version number in the ISPF statistics.

Subtask 1

Your first step is to copy a sequential data set into a member of a concatenated PDS.

Traditional ISPF: Use the 3.3 Move/Copy Utility.

Workplace: Use the Copy Action against the sequential data set object.

Choose the Workplace option (Option 11) on the main menu. Use the PF11 key to toggle to the data set view. In the Workplace you have a choice of working from a data set list or issuing commands against a single data set.

If you are list-oriented you can specify a wildcard pattern in the Object Name field (such as, 'USERID.*') to generate a data set list containing the sequential data set.

If you prefer to specify the sequential data set directly you can type it into the Object Name field either with or without single quotes (that is, SEQ.FILE or 'USERID.SEQ.FILE').

In either case the following accelerated methods can be alternatives to remembering and typing the input:

- You might be able to retrieve a recently referenced data set name or pattern from the REFLIST in the bottom half of the Workplace.
- You might be able to retrieve a recently referenced data set name or pattern using the recall key PF5.
- You might be able to retrieve a data set name or pattern from a personal list you previously created. These also appear in the bottom half of the Workplace.

Now that the Object has been specified you must specify the Action. In this example, the action is **COPY**. You can do this several ways, depending on your preferences.

- If you are in a list, you can use the CO line command to copy the data set, or you can put a slash (/) in the line command area to be prompted with a list of available commands to select.

Workplace (Option 11)

- If you specified the "from" data set directly (not from a list) you can use the **Copy** pulldown choice from the FILE action bar choice, or you can type the **C** fast path command in the Action ==> field to copy the data set.

In either case, a pop-up panel prompts you for the target data set, member name, and other parameters.

Subtask 2

The second step is to SuperC compare one member of a concatenated PDS to another.

Traditional ISPF: Use the 3.13 SuperC compare utility.

Workplace: Use the Workplace-to-SuperC Interface.

Using PF11, toggle back to the Workplace ISPF Library View.

Specify the ISPF library concatenation and member name of the new member you just created by the COPY action. The following accelerated methods can be used as alternatives to remembering and typing the input:

- You might be able to retrieve a recently referenced ISPF Library concatenation from the REFLIST in the bottom half of the Workplace.
- You might be able to retrieve a recently referenced ISPF Library concatenation using the recall key PF5.
- You might be able to retrieve an ISPF Library concatenation from a personal list you previously created. These also appear in the bottom half of the Workplace.

Now that the Object has been specified you must specify the Action. The action at this point is SuperCE. Again, specifying this action can be done several ways depending on your preferences.

- You can use the **SuperCE** pulldown choice from the SUPERC action bar.
- You can type the "SCE" fast path command in the Action ==> field and press Enter.

In either case, Workplace enters the SuperCE dialog. Note that your ISPF Library concatenation is transferred to the correct New DSN fields in the SuperCE concatenation panel, so you do not have to type it yourself.

After running your compare, exit the SuperC Utility to return to Workplace.

Subtask 3

The next step is to rename a member of an ISPF Library.

Traditional ISPF: Use the 3.1 Library Utility.

Workplace: Use the Rename member Action.

The ISPF library concatenation and member name of the new member you just compared remains on the Workplace panel. Now you must specify the Rename Action.

How do you prefer to do this?

- You can use the **Rename** pulldown choice from the FILE action bar.
- You can type the "R" fast path command in the Action ==> field, then press Enter.

Workplace (Option 11)

- You can work from a member list and issue the "R" line command to rename the member.

Member lists can be created a number of ways in Workplace:

- Just press Enter if your default enter action is Smart Action, a mode that analyzes the object and selects an appropriate action. Select the **Workplace settings** pulldown choice from the OPTIONS action bar to view or change your defaults.
- Enter the **List** pulldown choice from the FILE action bar.
- Enter the "ML" fast path command.

In any case, Workplace displays a pop-up panel to prompt you for the new member name.

Subtask 4

The final step in this scenario is to change a member's Version number in the ISPF statistics.

Traditional ISPF: Use the 3.5 Reset Statistics Utility.

Workplace: Use the Reset Action.

The ISPF library concatenation and member name of the new member you just compared remains on the Workplace panel. Now you must specify the Reset Action.

Again you have a choice about how to do this:

- You can use the **Reset** pulldown choice from the FILE action bar.
- You can type the "G" fast path command in the Action ==> field and press Enter.
- You can work from a member list and issue the "G" line command to rename the member or specify the "/" line command to be prompted with an action selection list.

In all cases, Workplace displays a pop-up panel to prompt you for Reset parameters.

Part 2. Appendixes

Appendix A. SuperC Reference

This Appendix contains General-use Programming Interface and Associated Guidance Information.

This appendix provides information about the SuperC return codes, process options, update data set control options, and process statements.

ISPF contains two utilities, SuperC (option 3.12) and SuperCE (option 3.13), that allow you to compare data sets for differences. Also, ISPF contains two other utilities, Search-For (option 3.14) and Search-ForE (option 3.15), that allow you to search data sets for strings of data.

All four of these utilities combine two major components to do their respective functions. The first component is a dialog that provides the data entry panels, selection panels, and messages. The second component is the program module - ISRSUPC. The CPI interface is through a standard OS/370 parameter list.

You can use the SuperC program without the ISPF utilities. To do this, however, your installation must customize a CLIST or REXX EXEC (for interactive use), or a PROCLIB procedure (for batch processing of a catalog procedure). A sample CLIST has been provided to show line command processing. A sample PROCLIB JCL catalog procedure has also been provided to show batch submission. The sample CLIST and PROCLIB JCL are located in the SAMPLIB data set as members ISRSCLST and ISRSPROC, respectively.

Utility Differences

The standard utilities, SuperC (option 3.12) and Search-For (option 3.14), are easy to use with somewhat reduced function. On the other hand, the extended utilities, SuperCE (option 3.13) and Search-ForE (option 3.15), fully exploit the SuperC program's capabilities.

Standard Utilities

The standard utilities are useful for ordinary comparisons and searches. The SuperC utility (option 3.12) uses a two-panel sequence: you specify the new input data set on the first panel and the old input data set on the second. The Search-For utility (option 3.14) uses an optional two-panel sequence: you can specify the input data set and one search string on the first panel, and use the second panel if you need to specify more than one search string.

You can enter additional information on these panels as they are displayed. If you are using the SuperC utility, you can enter the name of a previously prepared profile data set that contains additional information to specify the comparison.

Search-For does not use a profile data set. Also, Search-For finds all occurrences without case distinction when searching for a data string.

Extended Utilities

The primary intent of the extended utilities is to provide maximum flexibility and access to all SuperC functions. Input fields are provided to allow you to use process options and statements. Also, the Search-ForE utility's ASIS fields allow you to specify mixed case search strings.

The input data set name fields differ from standard ISPF format because Project, Group, Type, and Member fields are not provided. Instead, you can enter input data set names horizontally using standard TSO naming conventions. This includes the use of a PDS member name, if desired, as part of a data set name.

The concatenation of input data sets is also different. Up to four data set names, as opposed to the standard four ISPF library groups, can be entered as new or old data sets. This allows data sets with the same attributes to be concatenated. For example, PANELS and MSGS data sets could be concatenated for searching.

Besides compare functions, the SuperCE Utility panel provides access to the Search-ForE utility (option 3.15). This gives you the added advantage of the ability to search for a data string without having to leave SuperCE, in addition to access to more functions than Search-For (option 3.14) provides.

Program Description

The SuperC program is a fast and versatile program that can process:

- Two sequential data sets
- Two complete partitioned data sets
- Members of two partitioned data sets
- Concatenated data sets.

In fact, any data set that can be processed by ISPF can be processed by the SuperC program.

Note: ISPF does not support tape data sets.

SuperC can compare data sets even when there are many differences and redundant data. Some examples of redundant data are blank lines, duplicate words, and binary data with many duplicate characters.

Unlike many compare programs, SuperC is not limited to comparing data sets on a line-by-line basis. Instead, it allows you to choose between the following four comparison levels. The compare type you select determines which kinds of data differences are presented by SuperC. See "Why Compare Types May Produce Different Comparison Results" on page 456 for more information about comparison results.

- File comparisons produce summary information about the differences between the data sets being compared.
- Line comparisons are record-oriented and show matching, inserted, deleted, and reformatted lines. This level is most useful for comparing lines of program source code. It provides the least output difference information and is least sensitive to resynchronization.
- Word comparisons show differences between data strings that are delimited by blanks or nonalphanumeric characters, such as commas. Matching words are found, even if they are not on the same line. This level is most useful for comparing text data sets.

SuperC - Program Description

- Byte comparisons determine byte differences. It is most useful for comparing unformatted and machine-readable data.

The SuperC program requires only the names of the input data sets. However, the utility you are using may require other information, such as a listing type. Also, you can enter the following types of processing information and options on the utility data entry panels:

- Compare type
- Listing data set name or destination
- Process options
- Statements or profile data set name
- Browse output choice.

The SuperC program allows you to create two kinds of output:

- A listing that shows the results of the comparison or search and
- A structured data set that contains update information.

Within these two categories, you can create many kinds of output that make it easy to see where your data differs. To see your comparison results, you can generate listings that show:

- An overall summary of total changes
- The actual source code where deltas (differences) were found
- The deltas plus up to 10 (the default) matching lines before and after
- The deltas plus all matching lines.

You also have a choice between listings that show differences either sequentially or side-by-side.

In an update data set, output lines are identified and results are put in specific columns. An update data set is especially useful as input to a user-written application program. It allows a program to customize what you see, changing generalized output to information that is specific to a particular application.

The SuperC utility (options 3.12, 3.13, and 3.14) CLISTs allocate or free space under the following DDNAMEs: SYSIN, SYSIN2, OLDDD, NEWDD, OUTDD, and DELDD.

SuperC Features for the Year 2000 Transition

Using SuperC features specifically designed to help you manage the Year 2000 transition, you can:

- Specify a 100-year period (or “year window”) so that, for dates that have only a 2-digit year, the century can be determined. This can be based on either:
 - A “fixed” year window (with a fixed starting year), or
 - A “sliding” year window (starting at a specified number of year prior to the current year).
- Compare 2-digit year values in one data set with 4-digit year values in another data set.
- Compare compressed year values in one data set with uncompressed year values in another data set.
- Filter cosmetic differences caused by adding century digits to 2-digit years, so that you can more easily identify real differences in content.

Applications

You can use the SuperC program for many applications other than comparing two source data sets. This section lists some specific applications for general users, writers and editors, and programmers and systems administrators.

General users can:

- Compare two data sets that have been reformatted. Reformatted data sets contain such differences as indentation level changes, spaces inserted or deleted, or lines that have been reformatted and moved to other parts of the data set. SuperC detects and classifies reformatted lines as special changes. You can list these lines in the output, along with the normal insert/delete changes, or eliminate them from the listing. Reducing the number of flagged lines may help you focus on real, rather than cosmetic, changes.
- Determine whether two PDSs, or a concatenation of PDSs, have corresponding like-named members. Members absent from one data set but present in the other are listed, as is all change activity between like-named members. The comparison can show changes caused by creating or deleting PDS members.

Writers and editors can:

- Detect word changes within documents. SuperC finds word differences even if the words have been moved to different lines.
- Verify that only designated areas are changed. SuperC comparison results show all areas affected. Changes made to restricted areas may be invalid. Therefore, unintended changes can be detected so that a complete document need not be checked for errors again.
- Create a utility that automatically inserts SCRIPT revision codes. You could write a program that uses Word compare to find where words in the new data set are different, makes a copy of the new data set, and then inserts SCRIPT revision codes (.RC) before and after the changed words. This utility could eliminate the need to insert SCRIPT revision codes manually.

Programmers and systems administrators can:

- Generate management reports that show the quantity and type of changes in program source code. SuperC can count the changed and unchanged lines of code in an application program. Therefore, comparison results could be used to summarize the changes between different versions of a program.
- Retain a record of change activity. Listing data sets can be collected and retained as a permanent record of the changes made before a new program is released. Source code differences can help detect regressions or validate the appropriateness of any code modifications.
- Rewrite a listing data set, including additional headers or change delimiters. Some SuperC listings may need to be rewritten before you accept the results. For example, some installations may require security classifications. Others may require a listing created using the WIDE process option to have box delimiters surrounding changed sections.
- Compare data sets across nonconnected systems.

SuperC can generate a 32-bit hash sum per data set or member using the File compare type. Data sets compared on a nonconnected processor, using SuperC, should have the same hash sums if they are identical. A File comparison of any data set to determine a hash sum can be done by specifying the same data set as both new and old.

- Develop additional uses for update data sets.

SuperC produces general results with generalized reports. However, your installation may have additional requirements. There are many specialized update formats that you can use to produce listings that match these requirements. Normal SuperC listings may not fit this type of application, but the update data sets are more structured and should be easier to use as data input. See *ISPF Dialog Developer's Guide and Reference* for explanations and examples of the update data sets.

SuperC Compare Process Options

Option P on either the SuperCE Utility panel or the Search-ForE Utility panel provides one or more panels from which you can select process options. For SuperCE, the options displayed are compatible with the compare type (File, Line, Word, or Byte) that you specified in the Compare Type field. The compare type that you select determines the available process options (Table 26).

Table 26. Summary of Process Options for Search and Compare

Process Option		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
ALLMEMS	All members	✓	✓	✓	✓	✓
ANYC	Any case		✓	✓		✓
APNDLST	Append listing output	✓	✓	✓	✓	✓
APNDUPD	Append update		✓	✓	✓	✓
CKPACKL	Check for packed format		✓	✓		
CNPML ¹	Count non-paired member/file lines		✓			
COBOL ²	For COBOL source files		✓	✓		✓
COVSUM	Conditional summary	✓	✓	✓	✓	
DLMDUP	Do not list matching duplicate lines		✓			
DLREFM	Do not list reformatted lines		✓			
DPACMT	Do not process asterisk (*) comment lines		✓	✓		✓
DPADCMT	Do not process ADA-type comments		✓	✓		✓

Compare - Process Options

Table 26. Summary of Process Options for Search and Compare (continued)

Process Option		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
DPBLKCL	Do not process blank comparison lines		✓	✓		✓
DPCBCMT	Do not process COBOL-type comment lines		✓	✓		✓
DPCPCMT	Do not process C++ -type comment lines		✓	✓		✓
DPFTCMT	Do not process FORTRAN-type comment lines		✓	✓		✓
DPMACMT	Do not process PC Assembly-type comment lines		✓	✓		✓
DPPLCMT	Do not process PL/I-type comments		✓	✓		✓
DPPSCMT	Do not process Pascal-type comments		✓	✓		✓
FINDALL	Require all strings found for return code 1					✓
FMSTOP	Stop on first mismatch or first string found	✓				✓
FMVLNS	Flag moved lines		✓			
GWCBL	Generate WORD/LINE comparison change bar listing		✓	✓		
IDPFIX	Identifier -prefixed listing lines					✓
LMTO ³	List group member totals					✓
LNFMTO ³	List not-found member totals only					✓
LOCS	List only changed entries in summary	✓	✓	✓	✓	
LONGLN ⁴	Long lines		✓			✓

Table 26. Summary of Process Options for Search and Compare (continued)

Process Option		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
LPSF ³	List previous -search -following lines					✓
LTO ³	List totals only					✓
MIXED	Mixed input (single/double byte) text		✓	✓		
NARROW ⁴	Narrow (side -by -side) listing		✓			
NOPRTCC	No printer control columns	✓	✓	✓	✓	✓
NOSEQ ²	No sequence numbers	✓	✓	✓	✓	✓
NOSUMS	No summary section		✓	✓	✓	✓
REFMOVR	Reformat override		✓			
SDUPM	Search duplicate members					✓
SEQ ²	Ignore standard sequence number columns		✓	✓		✓
UPDCMS8 ⁵	Update CMS8 format		✓			
UPDCNTL ⁵	Update control		✓	✓	✓	
UPDLDEL ⁵	Update long control		✓			
UPDMVS8 ⁵	Update MVS8 format		✓			
UPDPDEL ⁵	Update prefixed delta lines		✓			
UPDREV ⁵	Update revision		✓	✓		
UPDREV2 ⁵	Update revision (2)		✓	✓		
UPDSEQ0 ⁵	Update sequence 0		✓			
UPDSUMO ⁵	Update summary only		✓	✓	✓	
WIDE ⁴	Wide (side -by -side) listing		✓			
XREF	Cross reference strings					✓
XWDCMP	Extended word comparison			✓		

Compare - Process Options

Table 26. Summary of Process Options for Search and Compare (continued)

Process Option		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
Y2DTONLY ⁶	Year 2000 Compare Dates Only		✍			

Note:

1. Valid for group LINE comparisons only.
2. COBOL, SEQ, and NOSEQ are mutually exclusive.
3. LMTO, LNFMT0, LPSF, and LTO are mutually exclusive.
4. LONGLN, NARROW, and WIDE are mutually exclusive.
5. All update (UPD) process options are mutually exclusive. Also, they cannot be used with the process option Y2DTONLY.
6. Y2DTONLY is not supported for change bar listing (process option GWCBL).

The SuperC Compare process options are listed alphabetically and defined below:

ALLMEMS

All members. Compare all members including alias entries. This functions as though all directory entries were selected from a member list.

ANYC Any case. SuperC converts the lowercase alphabetic characters (a-z) in source data sets to uppercase (A-Z) before comparing the data sets (the actual input data sets are not modified). Use this option to cause strings such as "ABC", "Abc", "ABc", ... to compare equally.

Notes:

1. ANYC has the lowest priority operation affecting the SuperC process. For example, it does not affect any of the strings used in SuperC compare process statements (except SRCHFOR).
2. The ANYC process option does not apply to characters in DBCS text strings.

See Figure 230 on page 454 for more information.

This option is valid for the Line or Word compare types.

APNDLST

Append the listing output to the specified or default listing data set. If the data set does not exist, it is allocated as new. Some data sets cannot be appended because of the append listing attributes and new compare listing attribute requirements. SuperC returns an error code for this condition without adding to the output data set.

Normally, APNDLST allows you to collect listings from separate comparisons into one named listing data set (a MOD function). You can sometimes do this without using the APNDLST option by using the SELECT process statement. This allows you to identify any number of members. This produces a single composite listing of a complete or partial PDS with a single SuperC invocation.

This option is valid for all compare types.

APNDUPD

Append the update output to the specified or default update data set. If the data set does not exist, it is allocated as new.

APNDUPD allows you to collect updates from multiple comparisons into one update data set. You can also do this without using the APNDUPD option by using the SELECT process statement that identifies different members and produces a single composite update data set.

This option is valid for Line, Word, or Byte Compare.

CKPACKL

Check for packed format. This option determines if the member or sequential data set has the standard ISPF packed header format. If required, SuperC unpacks the input data set or member during the comparison.

This option is valid for Line and Word compare types.

CNPML

Count non-paired PDS member lines for the group summary listing section. This option is useful for totaling the overall number of lines processed, “don’t process” lines, and changed lines. Otherwise, only the paired members are processed and included in the overall statistics. Members (with CNPML) always count as changes (inserted or deleted) to the total number of lines.

Only valid for a PDS group Line compare.

COBOL

Ignore columns 1–6 in both F 80 data sets. Data changes in columns 1–6 are ignored.

This option is valid for the Line or Word compare types.

COVSUM

Conditional summary section. List the final summary section and/or the update file for the option UPDSUMO only if there are differences. This is useful when used in combination with APNDLST or APNDUPD.

Valid for File, Line, Word, and Byte compare types.

DLMDUP

Don’t list matching duplicate lines. SuperC omits the old data set source lines and new data set source lines that match from the side-by-side output listing. This reduces the redundant lines in the side-by-side old data set source lines columns. It puts more emphasis on the old data set changed lines and sections of changes.

This option is valid for the Line compare type in combination with the WIDE or NARROW process option.

DLREFM

Don’t list old data set reformatted lines. This option omits reformatted old data set lines from the output listing. They usually appear as separate lines under new reformatted lines. Only the new reformatted lines are listed in the output.

Note: DLREFM should not be confused with two other related process options—REFMOVR and DLMDUP. REFMOVR temporarily changes the reformatted line status so that lines can be listed (or excluded) as

Compare - Process Options

matched lines. DLMDUP pertains only to duplicate matched lines for the Wide or Narrow listing types.

This option is valid only for the Line compare type.

DPACMT

Don't process asterisk (*) comment lines. Lines with an asterisk in column 1 are excluded from the compare set. Other forms of assembler or macro comments are unaffected. SuperC does not filter out assembler comments appearing on the same line as an assembler statement or directive.

This option is valid for the Line or Word compare types.

DPADCMT

Don't process ADA-type comments. ADA comments are whole or partial lines that appear after the special "---" sequence. Blank lines are also considered part of the comment set. This option produces a comparison listing with all comments removed and blanked. The DPADCMT process option does not recognize comments within DBCS text strings.

This option is valid for the Line or Word compare types.

DPBLKCL

Don't process blank compare lines. Source lines in which all of the compare columns are blank are excluded from the compare set. It is redundant, but not incorrect, to use this option with DPADCMT, DPPLCMT, and DPPSCMT.

Note: The CMPCOLM process statement can be used to control the compare columns inspected. It is possible for the DPBLKCL option to exclude a line that contains non-blank data when you use the CMPCOLM statement to limit the column range of the comparison.

Do not assume that DPBLKCL only excludes complete input blank lines. For example, a blank line could have sequence numbers in columns 73-80 and you could compare the data sets with the SEQ process option.

This option is valid for the Line or Word compare types.

DPCBCMT

Don't process COBOL-type comment lines. COBOL source lines with an asterisk in column 7 are excluded from the compare set.

This option is valid for the Line or Word compare types.

DPCPCMT

Don't process C++ end-of-line type compiler comments. These are "//" delimited comments. DPPLCMT may also be used with DPCPCMT when the source file contains "/* ... */" comments delimiters.

Valid for LINE and WORD compare types.

DPFTCMT

Don't process FORTRAN-type comment lines. FORTRAN source lines with a "C" in column 1 are excluded from the compare set.

This option is valid for the Line or Word compare types.

DPMACMT

Do not process PC Assembly-type comments. Lines with an "*" in column 1 are excluded.

Valid for LINE and WORD compare types.

DPPLCMT

Don't process PL/I-type comments. PL/I, C, and REXX comments (that is, /* ... */ and blank lines) are excluded from the compare set. This option produces a listing with comments removed and part comments blanked. Blank lines are defined as lines with blanks in all compare column positions.

Notes:

1. The SuperC program detects most cases including multiline, statement embedded, and most quote dependency comments. However, SuperC may exclude some lines that are not comments or include comment lines that should have been excluded. For instance, lines that contain comment delimiters enclosed within quotes appearing on separate lines are difficult to parse and may present recognition problems.
2. The DPPLCMT process option does not recognize comments within DBCS text strings.

This option is valid for the Line or Word compare types.

DPPSCMT

Don't process PASCAL-type comments. PASCAL-type comments of the type "(* . . . *)" are filtered and excluded from the compare set as are blank compare lines. This option produces a comparison listing with comments removed and part comments blanked. The DPPSCMT process option does not recognize comments within DBCS text strings.

Note: Both DPPSCMT and DPPLCMT may be a required combination for filtering certain nonstandard PASCAL compiler comments. The combination is allowed. Either may start a comment but only the starting delimiters type may terminate the comment.

This option is valid for the Line or Word compare types.

FMSTOP

Stop the compare on the first mismatch in the data set or PDS member. This option is valid only for a file compare.

FMVLNS

Flag moved lines. Identifies inserted lines from the new data set that match deleted lines from the old data set. Inserted-moved lines are noted with "IM-" and deleted-moved lines are noted with "DM-" in the listing. These lines are special cases of inserted or deleted paired lines.

This option is valid for the Line compare type.

GCWBL

Generates Word or Line compare change bar listings. SuperC lists new data set lines with change bars ("|") in column 1 for lines that differ between the new and old data sets. Most deleted lines are indicated by flagging the lines following the deletion (if possible).

Line compare and Word compare may give slightly different results. It is a recommended process option to use on text data sets. GCWBL allows you to see which lines have changes without the distraction of seeing deleted text lines. Blank lines in the listing should never be flagged.

This option is valid for the Line or Word compare types.

Compare - Process Options

LMCSFC

Load Module CSECT file compare list. This option lists the name, number of bytes, and hash sum for each PDS load module CSECT. Unchanged paired CSECTS are omitted when you specify the LOCS process option.

This option is only valid for a File compare.

LOCS List only changed entries in the MEMBER SUMMARY LISTING section. Unchanged paired entries and non-paired new and old data set entries are omitted. Preceding the names of these pairs is a CHNG field to indicate whether they compare the same or differently.

This option is valid for all compare types.

LONGLN

LONGLN causes SuperC to create a listing with 203 columns, reflecting up to 176 columns from the source lines. The output data set may require special print handling as it might exceed the maximum number of columns handled unless special setup is arranged.

LONGLN and WIDE both generate wide listings. LONGLN is for the normal listing format while WIDE is for a side-by-side listing.

This option is valid for the Line compare type.

MIXED

This option indicates that the input text may be a mixture of both single and double byte (DBCS) text. Double byte strings are recognized and handled differently than if MIXED were not specified. For instance, single byte characters are not valid within double byte strings. Special terminals (for example, 5520) allow entry of DBCS characters.

This option is valid for the Line and Word compare types.

NARROW

Narrow side-by-side listing. Creates a 132/133 variable listing data set with only 55 columns from each source data set. Inserted and deleted lines are flagged and appear side-by-side in the listing output.

This option is valid for the Line compare type.

NOPRTCC

No printer control columns. SuperC generates "normal" or NARROW listing data sets with record lengths of 133 columns, or WIDE or LONGLN listing data sets with 203 columns. These listings contain printer control columns and page separators. NOPRTCC eliminates both the page separators and the control column 1. With NOPRTCC, "normal" and NARROW listings are 132 columns, and WIDE and LONGLN listings are 202 columns. However, initial title lines and section separators are still generated.

This option produces a data set that is better for online "browsing" because it does not have interspersed page separator title lines.

Note: It is possible to use a high LNCT value to achieve the same purpose as NOPRTCC. However, NOPRTCC is a process option, is easier to specify, and does not require a separate LNCT process statement in a process statement data set.

This option is valid for all compare types.

NOSEQ

No sequence numbers. SuperC Processes F 80 standard sequence number columns as data. This option is extraneous for variable length records and non-F 80 attribute data sets.

This option is valid for all compare types.

NOSUMS

No summary listing section. This option omits the summary section including the statistics, options, warning, and error messages from the listing output.

This option is valid for the Line, Word, and Byte compare types.

REFMOVR

Reformat override. Reformatted lines are not flagged in the output listing. They are, however, counted for the overall summary statistics and influence the return code since they are a special case of an insert/delete pair.

This is an important output filter option. You may wish to accept formatted lines as changes but not want to browse a change listing with formatted lines annotated. The option is also useful when used in combination with some higher level language “don’t process” comment filter such as DPPLCMT.

This option is valid for the Line compare type.

SEQ

Sequence numbers. Ignore F 80 standard sequence number columns. Sequence number column changes in columns 73-80 are ignored with F 80 and columns 1-8 in V 255 records. This is the SuperC default for F 80/V 255 data sets when the compare type is Line. It is not the default for Word compare. SEQ is not valid for any data set that does not have an attribute of F 80/V 255.

This option is valid for the Line or Word compare types.

UPDCMS8

Update CMS Sequenced 8. Produces a data set that contains both control records and new data set source lines. Columns 73-80 from the old DS lines are used as references. Only fixed 80 data sets are allowed.

SuperC may change the status of matched lines to insert/delete pairs, enlarging the sequence number gaps of the old data set. The CMS update data set (when properly named) can be used as input to CMS XEDIT. For information and an example of this update data set, see Figure 243 on page 475.

This option is valid for the Line compare type.

UPDCNTL

Update control. Produces a control data set which relates matches, inserts, deletes, reformats, and “don't process” lines (Line compare only) using relative line numbers (for Line compare), relative word positions (for Word compare), or relative byte offsets (for Byte compare) within the new and old data sets. No source or data from either input data set is included in the output data set. For information and an example of this update data set, see “UPDCNTL—Update Control” on page 475.

Note: UPDCNTL is the only output to directly display “don’t process” line numbers and lengths from each DP (don’t process) or MOVED line span. Top inserts or deletes reference line 1. Bottom inserts or

Compare - Process Options

deletes reference the maximum line value plus 1. Normal compare listings do not directly indicate DP lines since they have been excluded from the compare set. They may be indirectly detected because most line number reference columns (normally on the extreme right of a listing) refer to the actual line number. You may detect a “don’t process” gap in the reported line number values.

This option is valid for the Byte, Line, or Word compare types.

UPDLDEL

Source data set with delta changes. UPDLDEL produces a control data set that combines new source matched lines and changes from the new and old source data sets. The control lines are titled as follows:

Title Control line

***HDR1, *HDR2,**
Header titles and data
and *HDR3

***M-** Matched line sequence header
***I-** Inserted line sequence header
***I-RP** Inserted line sequence header for replacement lines
***I-RF** Inserted line sequence header for reformatted lines
***D-** Deleted line sequence header
***D-RP** Deleted line sequence header for replacement lines
***D-RF** Deleted line sequence header for reformatted lines.

Header control records delimit the copied data set lines. This allows you to quickly find changed areas. The lines are full length records. The lines appear similar to the information on a LONG listing. The two input data sets must have the same fixed LRECL or each have a variable RECFM.

You should be able to edit this data set to obtain a final composite source data set including all the change activity of two different developers. For information and an example of this update data set, see “UPDLDEL—Update Long Source and Delta Data Set” on page 479.

This option is valid for the Line compare type.

UPDPDEL

Update prefixed delta lines. This option produces a control data set containing header records and complete (up to 32K line length limit) delta lines from the input source data sets. Each output record is prefixed with identification and information. The update data set is a variable length data set reflecting the input source data set characteristics. For information and an example of this update data set, see “UPDPDEL—Prefixed Delta Lines” on page 480.

This option is valid for the Line compare type.

UPDMVS8

Update MVS Sequenced 8. Produces a data set that contains both control and new data set source lines. New data set sequence numbers columns 73-80 are used (when possible) as insert references while deletes are from old line columns 73-80. The format is compatible for MVS IEBUPDTE input. Only fixed 80 DS are allowed. For information and an example of this update data set, see Figure 247 on page 479.

This option is valid for the Line compare type.

UPDREV

Update Revision. UPDREV produces a copy of the *new* data set with SCRIPT/VS *.rc on/off* or BookMaster *:rev/:erev* revision codes delimiting most script lines that contain changes.

You may wish to contrast the source lines delimited by the UPDREV option and a similar flagging of the lines with changes from the output listing data set as produced by the GWCBL process.

Note: The revision character used is controlled by using the REVREF process statement. For details, see “REVREF—Revision Code Reference” on page 429.

A REVREF process statement (for example, REVREF REFID=ABC or REVREF RCVAL=1) is used to define the revision level (SCRIPT/VS tags) or reference ID (BookMaster tags). Alternatively, SCRIPT/VS *.rc* delimiters may be controlled by the first record in the *new* data set. (For example, *.rc 2 |* as the first record causes level 2 to be used).

Note: BookMaster requires the REFID value to be defined with a *:revision* tag and “RUN=YES” attribute to have the change character inserted in the processed document.

For information and an example of this update data set, see “UPDREV—Update Revision” on page 481.

Valid for LINE and WORD compare types.

UPDREV2

Update Revision (2). UPDREV2 is identical to UPDREV with the exception that data between the following BookMaster tags are not deleted in the update data set:

```
:cgraphic.  
:ecgraphic.  
:fig.  
:efig.  
:lblbox.  
:elblbox.  
:nt.  
:ent.  
:screen.  
:escreen.  
:xmp.  
:exmp.
```

Valid for Line and Word compare types.

UPDSEQ0

Update data set using no column number (zero) references. UPDSEQ0 produces a control data set that relates inserts and deletes to the relative line numbers of the old data set. Both control records and new data set source lines are included in the output data set. This option is similar to UPDCMS8 except it uses relative line numbers (starting with zero) instead of sequence numbers from columns 73-80. Both fixed and variable record length lines are allowed. Fixed LRECL < 80 are padded to 80 characters. Insert lines are full fixed- or variable-length copies of the new input data set lines. Fixed-length record data sets with an LRECL ≤ 80 produce a fixed-length data set with the same record length. For information and an example of this update data set, see Figure 252 on page 484.

Compare - Process Options

This option is valid for the Line compare type.

UPDSUMO

Update Summary only. UPDSUMO produces an Update data set of four lines (New-dataset-id, Old-dataset-id, totals header, single summary line). The summary line is tagged with a "T" in column 1 and the summary statistics are located at fixed offsets in the output line. The data set has an LRECL of 132. For information and an example of this update data set, see "UPDSUMO—Update Summary Only" on page 484.

This option is valid for the Line, Word, or Byte compare types.

WIDE Wide side-by-side listing. Creates a 202/203 listing data set with up to 80 columns from each source data set line. Inserted and deleted lines are flagged and appear side-by-side in the listing output.

This option is valid for the Line compare type.

XWDCMP

Extended Word compare. The "word" character set contains all letters, numbers and the national characters ("\$", "#", and "@"). SuperC interprets all other characters as word delimiters. For example:

" ABCD(EFGH) JKL "

would be two words using normal word compare, but five (three words and two delimiters) with the XWDCMP process option. Consecutive delimiters are interpreted as part of the same pseudo-word.

This option is valid for the Word compare type.

Y2DTONLY

Year 2000 Compare Dates Only. Indicates that the comparison process is to be performed only on the dates defined by the Year 2000 Date Definition process statements. That is, all data in the input files will be ignored in the comparison process apart from that defined by NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D, and OY2P process statements. For further details on these process statements, see "NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D, OY2P —Year 2000 Date Definitions" on page 426.

Notes:

1.

Note: Y2DTONLY causes a "record-for-record" comparison to be performed between the two input files, whereby dates are simply checked for being equal or unequal. (The "high/low" comparison logic that SuperC normally uses is not applied in the case of Y2DTONLY and, as such, the relative *values* of the dates have no bearing on the result of the comparison.)

2.

Note: Y2DTONLY is not supported for the process option GWCBL (change bar listing).

Valid for LINE compare type.

SuperC Compare Process Statements

This section lists the process statements in alphabetic order, showing their syntax, operand definitions, and examples. All process statements that are shown with a Compare syntax can be:

- Used in a profile data set with the SuperC utility (option 3.12).
- Entered in a statements data set with the SuperCE utility (option 3.13).

All process statements that are shown with a Search syntax can be entered in a statements data set and used with the Search-ForE utility (option 3.15), but not with the Search-For utility (option 3.14).

Each process statement description contains the following information:

Description

A description of function and operation of the statement. This description may also refer to other statements that can be used with or affected by this statement.

Examples

Sample usage of the statements.

Syntax

Diagrams for coding the statement, using either Compare syntax, Search syntax, or both if applicable, according to the conventions listed in "Process Statement Notation Conventions".

Operands

A description of any required or optional keywords or operands.

Process Statement Notation Conventions

This section uses the following notation conventions to describe the syntax of the process statements:

- Process statements and keywords are shown in uppercase to help you differentiate between them and their operands, which are shown in lowercase. However, you can enter them in any case you like.
- Operands shown in brackets ([]) are optional.
- Stacked operands shown in brackets indicate the optional operands from which you can select one or none.
- Stacked operands shown in braces ({ }) are required operands from which you must select one.
- Syntax diagrams that end with an ellipsis (...) allow you to repeat operands more than once.
- If a statement contains a KYWD operand, this keyword must precede any repetition of the operands that follow.

The compare type that you select determines the process statements available (Table 27).

Table 27. Summary of Process Statements for Compare and Search

Process Statement		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
CHNGV	Change listing value		✔	✔	✔	

Compare - Process Statements

Table 27. Summary of Process Statements for Compare and Search (continued)

Process Statement		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
CMPBOFS	Compare byte offsets				✓	
CMPCOLM	Compare (search) columns: new, old, search files		✓	✓		✓
CMPCOLMN	Compare columns: new file		✓	✓		
CMPCOLMO	Compare columns: old file		✓	✓		
CMPLINE	Compare lines		✓	✓		✓
CMPSECT	Compare sections		✓	✓		
COLHEAD ¹	Define column headings		✓			
DPLINE	Do not process lines (containing a string)		✓	✓		✓
DPLINEC	Do not process lines—continuation		✓	✓		✓
LNCT	Line count	✓	✓	✓	✓	✓
LPSFV	List previous -search -following value					✓
LSTCOLM	List columns		✓			✓
NCHGT	Change text: new or search file		✓	✓		✓
NEXCLUDE ²	Exclude data: new file	✓	✓			
NFOCUS ²	Focus on data: new file	✓	✓			
NTITLE	Alternative listing title: new file	✓	✓	✓	✓	✓
NY2AGE	Year 2000 aging option: new file		✓			
NY2C	Year 2000 date definition: new file, character format		✓			
NY2Z	Year 2000 date definition: new file, zoned decimal format		✓			

Compare - Process Statements

Table 27. Summary of Process Statements for Compare and Search (continued)

Process Statement		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
NY2D	Year 2000 date definition: new file, unsigned packed decimal format		✓			
NY2P	Year 2000 date definition: new file, packed decimal format		✓			
OCHGT	Change text: old file		✓	✓		
OEXCLUDE ²	Exclude data: old file	✓	✓			
OFOCUS ²	Focus on data: old file	✓	✓			
OTITLE	Alternative listing title: old file	✓	✓	✓	✓	
OY2AGE	Year 2000 aging option: old file		✓			
OY2C	Year 2000 date definition: old file, character format		✓			
OY2Z	Year 2000 date definition: old file, zoned decimal format		✓			
OY2D	Year 2000 date definition: old file, unsigned packed decimal format		✓			
OY2P	Year 2000 date definition: old file, packed decimal format		✓			
REVREF	Revision code reference		✓	✓		
SELECT	Select PDS members (MVS)	✓	✓	✓	✓	✓
SLIST	Statements listing option	✓	✓	✓	✓	✓
SRCHFOR	Search for a string					✓
SRCHFORC	Search for a string—continuation					✓

Compare - Process Statements

Table 27. Summary of Process Statements for Compare and Search (continued)

Process Statement		Valid For				
		Compare Type				Search
Keyword	Description	FILE	LINE	WORD	BYTE	
Y2PAST	Year 2000 global date option		✓			
*	Process Statement comment to be printed	✓	✓	✓	✓	✓
.*	Process Statement comment not to be printed	✓	✓	✓	✓	✓

Note:

1. Valid only for listing types DELTA and LONG.
2. FILE compare type is valid only with ROWS option of NEXCLUDE, OEXCLUDE, NFOCUS and OFOCUS.

You must include these statements in an input control data set. The process statements data set can be fixed or variable, and its record length can be large, but you must enter process statements only in columns 1 through 72. Only one process statement can be entered per line. SuperC checks process statements and required operands for completeness before beginning a comparison. Comments are not allowed at the end of the line after the statement has been completed. Comment lines should be separate statements. Some statements cause an error message if comments are included on the same line.

You can enter some process statements several times in the statements data set (DPLINE or CMPLINE) as they define independent actions to be taken in the comparison. Others redefine their process scope after their first inclusion (LNCT). Including more than one redefining statement is not recommended but is not reported as an error. There is also no specific rule concerning which statement definition (or re-definition) prevails—the first (least often) or last (most often).

Note: It is best to retain and inactivate old process statements rather than deleting them from the statement data set. This can be easily done by putting a period and an asterisk (.) in the first two character positions. These statements are ignored and not listed by the SuperC program when the data set is used as a statement data set.

The SuperC Compare Process Statements are listed alphabetically and defined in the following sections.

CHNGV - CHNG (Compare Type) Line Value

Specifies the maximum number of match lines to precede or follow changed lines in the output listing. This process statement has no formatting effect if you do not use the CHNG listing type. The default value is 10.

Compare Types – Line, Word, and Byte

Examples

CHNGV 5

SuperC includes up to 5 match lines before and after a changed line in the output listing.

Syntax

CHNGV num

Operand Description

num A decimal number between 1 and 1000.

Compare - Process Statements

CMPBOFS - Compare Byte Offsets

Compares a data set between byte limits. The start/stop reference values must be hexadecimal values without quotes. Zero (0) is the lowest hexadecimal offset value that you can specify. The statement may be specified on one complete line or may have separate CMPBOFS statements enabling the limits to be fully specified within the 72-character statement line. There are keyword operands: TOP, BTM, NTOP, NBTM, OTOP, and OBTM.

Compare Types – Byte

Examples

```
CMPBOFS NTOP 1000 OTOP 5E00
```

SuperC interprets the two CMPBOFS statement sequences as compare from hex offset 1000 to the last byte of the new data set and from hex offset 5E00 to the last byte of the old data set.

```
CMPBOFS NTOP 1000 CMPBOFS OTOP 5E00
```

Performs the same function as the statement in the previous example but it is specified as two separate statements.

Syntax

```
CMPBOFS KYWD hex-offset [ ...]
```

Operand Description

KYWD

The keyword may be one of the following:

- TOP** New Top and Old Top specification. Defines the byte offset (zero based) to start the Byte compare for both data sets or members.
- BTM** New Bottom and Old Bottom specification. Defines the byte offset (zero based) to end the Byte compare for both data sets or members. This value may be greater than the data set size but the omission of the BTM specification accomplishes the same objective.
- NTOP** New Top. Defines the byte offset (zero based) to start the Byte compare for the new data set or member.
- OTOP** Old Top. Same as NTOP but refers to the old data set or member.
- NBTM**
New Bottom. Defines the last byte position to end the Byte compare in the new data set or members.
- OBTM**
Old Bottom. Same as NBTM but refers to the old data set or member.

Hex offset

A hexadecimal value without quotes. Maximum size: 8 hexadecimal digits.

Note: If you do not specify "TOP", "NTOP", or "OTOP", SuperC defaults to the top of the data set. If you do not specify "BTM", "NBTM", or "OBTM", SuperC defaults to the last byte of the data set.

CMPCOLM, CMPCOLMN, CMPCOLMO - Compare Columns**CMPCOLM**

Applies to the columns in both the new (or search) data set and old data set

CMPCOLMN

Applies to the columns only in the new data set

CMPCOLMO

Applies to the columns only in the old data set.

SuperC compares the data from the columns of the input data set. Up to 15 compare ranges/individual-columns are allowed and may be entered on additional CMPCOLM, CMPCOLMN, or CMPCOLMO statements. The column values and ranges must be in ascending order.

Note: Some process options (SEQ, NOSEQ, and COBOL) also define CMPCOLMS. The CMPCOLMS statement overrides all of these options.

Compare Types — Line and Word

Examples

CMPCOLM 25:75	Compares columns 25 through 75 in both data sets.
CMPCOLM 30:60,75	Compares columns 30 through 60 and column 75 in both data sets.
CMPCOLM 30:60 75	Performs the same function as the previous example. Notice that the comma and space are equivalent.
CMPCOLMN 1:72 CMPCOLMO 9:80	Compare different columns from each data set.

Syntax

CMPCOLM start-colm[:stop-colm][,...]

CMPCOLMN start-colm[:stop-colm][,...]

CMPCOLMO start-colm[:stop-colm][,...]

Operand Description**start-colm**

A number that identifies the column in which SuperC begins the comparison.

stop-colm

A number that identifies the column in which SuperC ends the comparison. This number is separated from the start-colm value by a colon (:).

Compare - Process Statements

CMPLINE - Compare Lines

Compares two data sets between line limits. The reference values may be line numbers or data patterns. The statement may be specified on one complete line or may have separate CMPLINE statements for each of the keyword operands: TOP, BTM, NTOP, NBTM, OTOP, and OBTM.

Compare Types — Line and Word

Examples

CMPLINE TOP 55 BTM 99	Compares lines 55 through 99 in both data sets.
CMPLINE NTOP 55 NBTM 99	Limits the comparison to lines 55 through 99 in the new data set.
CMPLINE NTOP 'ABCD',5:66	Starts the comparison when the first "ABCD" is detected in columns 5 through 69.
CMPLINE OTOP 'ABCD'	Starts the comparison when SuperC detects the first "ABCD" in any column of the old data set.

Syntax

```
CMPLINE KYWD {rel-line-#} [ ... ]  
           {,'string'[,start-colm[:stop-colm]]}
```

Operand Description

KYWD

The keyword may be one of the following:

TOP New and Old Top. Defines the beginning line in both data sets or members.

BTM New and Old Bottom. Defines the ending line in both data sets or members.

NTOP New Top. Defines the beginning line in the new data set.

NBTM
New Bottom. Defines the ending line in the new data set.

OTOP Old Top. Defines the beginning line in the old data set.

OBTM
Old Bottom. Defines the ending line in the old data set.

rel-line-#

The relative number of the record in the data set or member. Valid range = 1 to 999999.

string Character string enclosed within single quotes. For embedded single quotes, use two consecutive quotes ("). For example, enter 'don't' for the string "don't".

start-colm

A number that identifies the column in which SuperC begins its search for *string*. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which SuperC ends its search for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. For example, if you

Compare - Process Statements

specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

Notes:

1. If SuperC does not find the “top” condition you specify (for example, a pattern is incorrect), the compare continues but usually reports zero lines processed for this data set.
2. If you do not specify “TOP”, “NTOP”, or “OTOP”, SuperC defaults to the top of the data set. If you do not specify “BTM”, “NBTM”, or “OBTM”, SuperC defaults to the end of the data set.

Compare - Process Statements

CMPSECT - Compare Sections

Compares multiple sections from one sequential or PDS member to another sequential or PDS member. It is not valid for a PDS group compare of more than one member. It is functionally similar to CMPLINE but requires a section ID name to associate all keyword operands to a particular compare section.

Compare Types — Line and Word

Examples

```
CMPSECT SECT01 TOP 25 BTM 50
```

Compares lines 25 through 50 in both data sets or members.

```
CMPSECT SECT02 NTOP 60 NBTM 70 CMPSECT  
SECT02 OTOP 65 OBTM 75
```

Compares lines 60 through 70 in the new data set to lines 65 through 75 in the old data set.

```
CMPSECT SECTX TOP 'PART1:',2:10 CMPSECT  
SECTX BTM 'END PART1:',2:10
```

Starts the comparison of both data sets when SuperC detects the string "PART1:" in columns 2 through 10 and ends the comparison when SuperC detects the string "END PART1:" in columns 2 through 10.

```
CMPSECT SECTY NTOP 'PART2:',2:10 CMPSECT  
SECTY OTOP 'PART2:',6:20 CMPSECT SECTY  
BTM 'END PART2:',2:10
```

Compares a section in the new data set to a section in the old data set. The section in the new data set begins with the string "PART2:" in columns 2 through 10 and ends with the string "END PART2:" in columns 2 through 10. The section in the old data set begins with the string "PART2:" in columns 6 through 20 and ends with the string "END PART2:" in columns 2 through 10.

Note: All of the previous statements could be combined to compare multiple sections of the new and old data sets.

Syntax

```
CMPSECT KYWD {section-id }[... ]  
{,'string'[,start-colm[:stop-colm]]}[...]
```

Operand Description

KYWD

The keyword may be one of the following:

TOP New and Old Top. Defines the beginning line in both compare sections.

BTM New and Old Bottom. Defines the ending line in both compare sections.

NTOP New Top. Defines the beginning line in the new compare section.

NBTM New Bottom. Defines the ending line in the new compare section.

OTOP Old Top. Defines the beginning line in the old compare section.

OBTM Old Bottom. Defines the ending line in the old compare section.

section-id

The relative number of the record in the data set or member. Valid range = 1 to 999999.

Compare - Process Statements

string Character string enclosed within single quotes. For embedded single quotes, use two consecutive quotes ("). For example, enter 'don't' for the string "don't".

start-colm

A number that identifies the column in which SuperC begins its search for *string*. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which SuperC ends its search for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. For example, if you specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

Note: If a "top" condition is not found (for example, a pattern is incorrect), the compare continues but will usually report zero lines processed for this data set.

Compare - Process Statements

COLHEAD—Define Column Headings

Defines column headings and specifies the location and format of the corresponding data to be displayed. For an example of a listing with column headings, see Figure 236 on page 465.

Note: COLHEAD is not available for side-by-side listings. (See “Side-By-Side Listings” on page 470).

Compare Types

LINE only.

Syntax

```
COLHEAD heading1, heading2, start-print-column:end-print-column,  
        N start-column:end-column data-format-indicator,  
        O start-column:end-column data-format-indicator
```

Operand Description

<i>heading1</i>	The heading to appear on the first line for the print column.
<i>heading2</i>	The heading to appear on the second line for the print column.
<i>start-print-column</i>	The starting print column for the heading specified.
<i>end-print-column</i>	The ending print column for the heading specified. (Must be separated from the <i>start-print-column</i> by a colon.)
	Note: If the print-column range is shorter than the heading specified, the heading will be truncated.
N	Indicates the operands following relate to the <i>new</i> data set.
<i>start-column</i>	The starting position in the <i>new</i> data set of the data to be displayed.
<i>end-column</i>	The ending position in the <i>new</i> data set of the data to be displayed. (Must be separated from the <i>start-column</i> by a colon.)
Data Format Indicator	The format of the data in the <i>new</i> data set to be displayed: C Character B Binary D Unsigned packed decimal P Packed decimal Z Zoned decimal
O	Indicates the operands following relate to the <i>old</i> data set.
<i>start-column</i>	The starting position in the <i>old</i> data set of the data to be displayed.
<i>end-column</i>	The ending position in the <i>old</i> data set of the data to be displayed. (Must be separated from the <i>start-column</i> by a colon.)

Compare - Process Statements

Data Format Indicator

Example

```
COLHEAD 'START','DATE',1:7,N 1:6 P,0 11:16
```

The format of the data in the *old* data set to be displayed (as for the *new* data set).

Description

Defines a print column with a heading of "START" in the first line and "DATE" in the second heading line, headings to start in print column 1. The data to be displayed from the new data set is in positions 1 through 6 and is in packed format. The data to be displayed from the old data set is in positions 11 through 16 and is in (the default) character format.

Compare - Process Statements

DPLINE, DPLINEC - Don't Process Lines

DPLINE

Don't Process Lines

DPLINEC

Don't Process Lines Continuation Condition.

The Don't Process Line statement removes from the compare set lines that can be recognized by either a unique character string or a combination of related strings. DPLINEC is the continuation of the immediately preceding DPLINE or DPLINEC process statement. All the strings in a DPLINE/DPLINEC sequence must be found on the same input line for the line to be excluded.

A start-column or range can also be used to restrict the columns scanned. Relative start-columns and relative stop-columns are valid only on DPLINEC statements. This allows you to specify a relative start position depending on the end of the previous DPLINE/DPLINEC in the sequence relationship. Normal scanning starts at the beginning of the input line (resulting in the first found string) unless restricted by user column specifications or the relative operator.

Notes:

1. DPLINE and DPLINEC columns are not restricted by compare columns. The data patterns are also not affected by the ANYC process option. See Figure 230 on page 454 for more information.
2. The relative start operator "+" introduces another important capability of backtrack and retry by advancing the starting scan position. Backtrack allows you to identify a string through a sequence of DPLINE/DPLINEC statements and have a number of similar strings (all on the same line) be examined until the correct sequence is found. This contrasts to the "first found" DPLINE/DPLINEC string and a non-relative DPLINEC rejection when the DPLINEC condition is not met.

Compare Types — Line and Word

Examples

DPLINE 'ABCDE' DPLINE 'ABCDE',1:99999	Each of the following two statements exclude lines containing the string "ABCDE" from the compare set.
DPLINE 'AbCde',2 DPLINE 'AbCde',2:2	Each of the following two statements exclude lines where the string "ABCDE" starts in column 2.
DPLINE 'ABCDE' DPLINEC 'BDEF '	Both statements exclude lines that contain the strings "ABCDE" and "BDEF".
DPLINE 'ABCDE',2:50	Excludes lines where the string "ABCDE" starts in columns 2 through 50.
DPLINE 'AB'CD',2:50	Excludes lines where the string "AB'CDE" starts in columns 2 through 50.
DPLINE X'C1C27BF1',2:50	Excludes lines where the string "AB,1" starts in columns 2 through 50.
DPLINE 'ABC' DPLINEC 'BDEF',+	Exclude lines containing the string "ABC" followed in the same line by the string "BDEF".
DPLINE 'ABC's DPLINEC 'BDEF',+5	Exclude lines containing the string "ABC" and "BDEF" when the string "BDEF" starts in the same line 5 columns after the end of the string "ABC".

Syntax

```
DPLINE 'string'[,start-colm[:stop-colm]]
```

```
DPLINEC 'string'[,start-colm[:stop-colm]]
[,+start-colm[:+stop-colm]]
[,+]
```

Operand Description

string Character string enclosed within single quotes. For embedded single quotes, use two consecutive quotes ("").

start-colm

A number that identifies the column in which SuperC begins its search for *string*. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which SuperC ends its search for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. This causes a search of a single column for the first character of *string*.

All columns to the right of the column that the last character of *string* can occupy are ignored. For example, if you specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

+start-colm

The relative column following the end of the previous "Don't process" string in which this *string* must start.

+stop-colm

The relative column following the end of the previous "Don't process" string in which SuperC ends the search for *string*.

+ Following the previous "Don't process" string, scan to the end of the line for *string* (same as + 1:99999).

Compare - Process Statements

LNCT - Line Count

Specifies the number of lines per page in the listing output. Ignored if the NOPRTCC process option is specified. The default value is 55 lines.
Compare Types — File, Line, Word, and Byte

Examples

LNCT 66

Lists up to 66 lines per page.

Syntax

LNCT num

Operand Description

num A decimal number between 15 and 999999.

LSTCOLM - List Columns

Selects a range of columns to be listed in the output. This statement overrides the SuperC convention of generating a listing starting with column 1 from the input source data set.

LSTCOLM column selections must be contiguous and can be no wider than the output listing line without truncation.

Compare Types — Line only

Examples

LSTCOLM 20:90

Lists columns 20 through 90 in the output listing.

Syntax

LSTCOLM range

Operand Description

range Two column numbers separated by a single colon (:). Do not leave blanks on either side of the colon.

Compare - Process Statements

NCHGT, OCHGT - Change Text

NCHGT

Change new input text string

OCHGT

Change old input text string.

Change the input source image before performing the comparison. More than one change text statement can be contained in the statements data set.

The find-mask and replacement string need not be the same length. The replacement string may even indicate a null string. Unequal replacements result in either blank insertions on short replacements (at the end of the found word) or downstream blank deletions to accommodate larger replacements (deleted blanks are selected from downstream blank pairs). The net effect of a longer string replacement of a shorter string shows as a reformat of the original line. The replaced text line appears in the output instead of the input text.

One or more question marks ("??") can be used as "wildcard" characters in the find-mask or string. A wildcard in the output string stores the input character "as is".

Compare Types — Line and Word

Examples

NCHGT 'ABCD','XXXX'

Changes all "ABCD"s to "XXXX" (exclude) in the new data set.

OCHGT 'ABCD','XXXX',1:50

Restricts the mask search to columns 1 through 50 in the old data set.

OCHGT 'ABCD','',1:50

Changes string "ABCD" to a null string in columns 1 through 50 in the old data set.

NCHGT X'7B01','':1',6

Uses the hexadecimal string change convention.

NCHGT 'PREF???'', 'NPREF'

Changes the string "PREF" and the wild card characters to the string "NPREF".

NCHGT 'PREF???'', 'NPREF??'

Changes the string "PREF" and the first wild card character to the string "NPREF". The second and third wildcard characters are not changed.

Syntax

NCHGT 'find-mask','string'[,start-colm[:stop-colm]]

OCHGT 'find-mask','string'[,start-colm[:stop-colm]]

Operand Description

find-mask

The change text string to be replaced. The *find-mask* must be in single quotes. Use two consecutive single quotes for quotes within the *find-mask*.

string

A character string that replaces the contents of *find-mask* before a comparison or search. Single quotation marks are required. If the character string contains a single quotation mark, you must enter it in the process statement as two single quotation marks.

Compare - Process Statements

You can include one or more question marks in the *string*. It shows that the position it occupies can be filled by any character, one character per question mark.

If there is not enough space for the string to be substituted, the substitution does not occur. Instead, a warning message is printed at the bottom of the listing.

start-colm

A number that identifies the column in which SuperC begins its search for *string*. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which SuperC ends its search for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. This causes a search of a single column for the first character of *string*.

All columns to the right of the column that the last character of *string* can occupy are ignored. For example, if you specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

Notes:

1. Having a string replacement that is longer than the replaced string is not always possible with some lines. A warning message signals when this happens and the problem change-text statement will be designated in the summary section.
2. A string replacement using the “null” character notation does not always work as first envisioned. Nulling a character string only shifts following characters up through the next blank character. One or more blank pad characters are applied to take up the null positions of the original string. Entire lines are not shifted — only non-blank character strings.

```
NCHGT ' ',''
```

```
blank insertion.
```

```
NCHGT '???' ','
```

Compare - Process Statements

NEXCLUDE, OEXCLUDE —Exclude Data:

NEXCLUDE—Exclude applies to the new data set

OEXCLUDE—Exclude applies to the old data set

Excludes rows or columns of data from the comparison. Up to 254 “exclude” statements can be entered for each data set.

Notes:

1. NEXCLUDE and OEXCLUDE statements are mutually exclusive to NFOCUS and OFOCUS statements respectively if using the same operand keyword (ROWS or COLS).
2. Do not use the NEXCLUDE or OEXCLUDE process statement if the Y2DONLY process statement has been specified.
3. Valid row range = 1 to 999999.

Compare Types

FILE (ROWS option only) and LINE.

Syntax

xEXCLUDE KYWD *start-position:end-position*

where xEXCLUDE can be either NEXCLUDE (new data set) or OEXCLUDE (old data set), and KYWD can be either **ROWS** or **COLS**. COLS is not valid for a FILE compare.

Operand Description

start-position

If ROWS operand used, the first row (record) to be excluded from the comparison. If COLS operand used, the first column to be excluded from the comparison.

end-position

If ROWS operand used, the last row (record) to be excluded from the comparison. If COLS operand used, the last column to be excluded from the comparison. (Must be separated from the *start-position* by a colon.)

Example

NEXCLUDE ROWS 5:900

OEXCLUDE ROWS 1:900

OEXCLUDE COLS 100:199

Description

Excludes rows (records) 5 through 900 on the new data set.

Excludes rows (records) 1 through 900 on the old data set.

Excludes columns 100 through 199 on the old data set.

NFOCUS, OFOCUS— Focus on Data

NFOCUS—Focus applies to the new data set
OFOCUS—Focus applies to the old data set

Selects (or “focuses on”) rows or columns of data to be compared. In other words, only these rows or columns are considered when performing the comparison (or search) process and all other rows or columns are ignored. Up to 254 “focus” statements can be entered for each data set.

Notes:

- 1. NFOCUS and OFOCUS statements are mutually exclusive to NEXCLUDE and OEXCLUDE statements respectively if using the same operand keyword (ROWS or COLS).
- 2. Do not use the NFOCUS or OFOCUS process statement if the Y2DTONLY process statement has been specified.
- 3. Valid row range = 1 to 999999.

Compare Types

FILE (ROWS option only) and LINE.

Syntax

xFOCUS KYWD *start-position:end-position*

where xFOCUS can be either NFOCUS (new data set) or OFOCUS (old data set), and KYWD can be either ROWS or COLS. COLS is not valid for a FILE compare.

Operand Description

<i>start-position</i>	If ROWS operand used, the first row (record) to be selected for the comparison. If COLS operand used, the first column to be selected for the comparison.
<i>end-position</i>	If ROWS operand used, the last row (record) to be selected for the comparison. If COLS operand used, the last column to be selected for the comparison. (Must be separated from the <i>start-position</i> by a colon.)

Example	Description
NFOCUS ROWS 28:90	Selects rows (records) 28 through 90 on the new data set.
OFOCUS ROWS 150:165	Selects rows (records) 150 through 165 on the old data set.
OFOCUS COLS 10:18	Selects columns 10 through 18 on the old data set.

Compare - Process Statements

NTITLE, OTITLE - Alternate Listing Title

NTITLE

New listing data set title identification

OTITLE

Old listing data set title identification.

Allows you to specify an alternate data set identification in the output listing (54-character limit for each title identifier). This replaces the data set and library names used in the compare.

Note: This option is most useful when a single non-group compare is done on a temporary data set. The NTITLE/OTITLE identification may be more meaningful than the actual data set names used in the compare. This is only allowed for single members or sequential data sets.

Compare Types

File, Line, Word, and Byte

Examples

```
NTITLE 'New Substitution Name'  
OTITLE 'Old Substitution Name'
```

Change the titles in the output listing of the new and old data set.

Syntax

```
NTITLE 'string'
```

```
OTITLE 'string'
```

Operand Description

string The string can be up to 54 characters and must be delimited by single quotes. Use two consecutive single quotes for each embedded quote. The string is not checked for valid MVS data set name characters.

NY2AGE, OY2AGE —Year 2000 Aging Option

NY2AGE—Aging applies to the new data set
OY2AGE—Aging applies to the old data set

Ages all of the defined dates in either the new or old data set. That is, the number of years specified is added to the “year” portion of each defined date in the data set concerned.

Note: Dates are *defined* by the Year 2000 Date Definition process statements NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D and OY2P; see “NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D, OY2P —Year 2000 Date Definitions” on page 426.

Compare Types

LINE

Syntax

NY2AGE *years*
OY2AGE *years*

Operand Description

years A number (0 to 999) indicating the number of years by which all defined dates in the data set are to be aged.

Example

OY2AGE 28

Description

Ages all defined dates in the “old” data set by 28 years before being compared. The listing will show the original date. For example, a defined date in the “old” data set with a value equating to March 1, 1997, would be aged to March 1, 2025 before being compared to its equivalent in the “new” data set.

Compare - Process Statements

NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D, OY2P —Year 2000 Date Definitions

NY2C—New data set, date in character format
NY2Z—New data set, date in zoned decimal format
NY2D—New data set, date in unsigned packed decimal format
NY2P—New data set, date in packed decimal format

OY2C—Old data set, date in character format
OY2Z—Old data set, date in zoned decimal format
OY2D—Old data set, date in unsigned packed decimal format
OY2P—Old data set, date in packed decimal format

Notes:

1. If any Year 2000 Date Definition process statements are used, a Y2PAST process statement should also be used so that the “century” portion of the date can be determined where necessary. (If a Y2PAST process statement is not present, a default fixed window based on the current year is used.)
2. For a description of each date format (character, zone, decimal and packed), see “” on page 427.
3. If any Year 2000 Date Definition process statements are used, an *information line* is generated on the listing output.
4. Do not use any Year 2000 Date Definition process statements if using the COLHEAD process statement.

Defines the location and format of a date field on the input data set. Up to 254 date definition statements can be entered for each data set. The matching of the new to the old dates is performed according to the sequence that the statements are entered. That is, the first defined *old* date is matched to the first defined *new* date.

If the number of date definition statements for one data set differ to the number of date definition statements for the other data set, the location and format details for the “missing” date definition statements are assumed to be the same as their counterpart date definition statements for the other data set.

Compare Types

LINE

Syntax

xY2y start-column:end-column date-format EMPTY

where xY2y can be either NY2y (new data set) or OY2y (old data set), and y can be either C (character format), Z (zoned decimal format), D (unsigned packed decimal format), or P (packed decimal format).

Note: The EMPTY keyword, when used, must be preceded by a space.

Operand Description

<i>start-column</i>	The first position of the date in the input data set.
<i>end-column</i>	The last position of the date in the input data set. (Must be separated from the <i>start-column</i> by a colon.)
<i>date-format</i>	A mask representing the format of the date.

Compare - Process Statements

For a Julian date, the mask must be either YYDDD or YYYYDDD.

For date formats other than Julian, the mask must contain 2 "D"s (representing the day part of the date field), 2 "M"s (representing the month), and either 2 or 4 "Y"s (representing the year) or, if the date contains a year only, it must contain either 2 or 4 "Y"s.

If the date is character, there may also be a separator between the different parts. In this case, you can represent the position of the separators by one of the following:

- S
- . (period)
- / (forward slash)
- : (colon)

Note: The length of the *date-format* mask must correspond to the length of the date in the input data set as indicated by the values of *start-column* and *end-column*.

EMPTY

This keyword is optional. If it is entered, the defined date field is checked for containing zeroes, spaces, low-values, or high-values before commencing the comparison process. If any of these values are found, the date will not be converted according to the Y2PAST criteria but will instead be converted to an extended format with the initial value. For example, a date defined by the process statement 0Y2C YYMMDD which contains all zeroes will be compared as "YYYYMMDD" with a value of zeroes.

Example

NY2C 1:8 MMDDYYYY 9:16 MMDDYYYY 21:28
YYYYMMDD

OY2P 5:8 YYMMDD 9:12 YYMMDD

OY2P 101:104 MMDDYY

NY2Z 101:108 YYYYMMDD

NY2C 101:110 YYYY.MM.DD

OY2C 93:98 DDMMYY EMPTY

Description

The new data set has dates in character format in columns 1 to 8, 9 to 16 and 21 to 28.

The old data set has dates in packed decimal format in columns 5 to 8 and 9 to 12.

The old data set has a date in packed decimal format in columns 101 to 104,

The new data set has a date in zoned decimal format in columns 101 to 108.

The new data set has a date in character format (with separators) in columns 101 to 110.

The old data set has a date in character format in columns 93 to 98. If the date field contains zeroes, spaces, low-values, or high-values, the date in the old data set is converted before being compared to an extended format (DDMMYYYY) with a value of all zeroes, spaces, low-values, or high-values respectively.

Date Formats (Keyword suffixes: C, Z, D, P)

Compare - Process Statements

- C** Character date data.
- Examples:
'96' is represented as hexadecimal X'F9F6'
If using a MMDDYY format, March 21, 1996 is represented as hexadecimal X'F0F3F2F1F9F6'
- Z** Zoned decimal date data. The date can be represented as follows:
X'xyxy' to X'xyxyxyxyxyxyxyxy'
y is hexadecimal 0–9 and represents a date digit. x is hexadecimal 0–F and is ignored.
- Examples:
'96' is represented as hexadecimal X'F9C6' or X'0906'
'03211996' is represented as hexadecimal X'F0F3F2F1F1F9F9C6' or X'0003020101090906'
- P** Packed decimal date data. The date can be represented as follows:
X'zyyx' to X'zyyyyyyyx'
y is hexadecimal 0–9 and represents a date digit. x is hexadecimal A–F and is ignored. The z part is normally zero but will not be ignored.
- Examples:
'96' is represented as hexadecimal X'z96F' or X'z96C'
'1996' is represented as hexadecimal X'z1996C'
'03211996' is represented as hexadecimal X'z03211996x' (the x part is ignored).
'96203' (a Julian date) is represented as hexadecimal X'96203C'
- D** Unsigned packed decimal date data. The date can be represented as follows:
'yy' to 'yyyyyyyyy'
y is hexadecimal 0–9 and represents a date digit.
- Examples:
'96' is represented as hexadecimal X'96'
'03211996' is represented as hexadecimal X'03211996'

REVREF—Revision Code Reference

Identifies the revision type (BookMaster or SCRIPT/VS) and level-ID for delimiting UPDREV and UPDREV2 output changes. The revision delimiter may, alternatively, be specified or indicated by using a SCRIPT/VS .rc definition statement as the first line of the *new* input data set.

If either the UPDREV or UPDREV2 process option is specified and no REVREF process statement is in the statements data set, or the first *new* data set source line is not a .rc script definition statement, SuperC defaults the revision definition to a SCRIPT/VS specification of .rc 1 |.

Note: BookMaster requires the REFID value to be defined with a :revision tag. Do not forget the “RUN=YES” attribute if you want your document to have the change-bar inserted in the processed document.

Compare Types
LINE, WORD

Syntax
REVREF REFID=*name*
RCVAL=*number*

Operand Description

REFID= <i>name</i>	Name of the revision identifier for the BookMaster :rev/:erev. tags.
RCVAL= <i>number</i>	Numeric revision code for SCRIPT/VS revision tags.

Example	Description
REVREF REFID=ABC	BookMaster example—:rev refid=ABC. and :erev refid=ABC. tags.
REVREF RCVAL=5	SCRIPT/VS example—.rc 5 on/off delimiters.

Compare - Process Statements

SELECT - Select PDS Members

This process statement allows you to specify members to select from a PDS. You can specify as many member names as will fit on one line. Therefore, if you need to select additional members, enter a new SELECT statement.

For comparisons, the new members are normally compared with old members that have the same names. Use the colon character (:) to compare members that are not named alike. SELECT is valid with all compare types.

Compare Types

File, Line, Word, and Byte

Examples

```
SELECT PROG1,NEWPROG2:OLDPROG2,PROG3
```

Tells SuperC to make the following one-to-one comparisons:

NEW MEMBER		OLD MEMBER
-----		-----
PROG1	-000000▶	PROG1
NEWPROG2	-000000▶	OLDPROG2
PROG3	-000000▶	PROG3

Syntax

```
SELECT new-member[:old-member],...
```

Operand Description

new-member

The name of a new PDS member that is to be compared to an old PDS member.

old-member

The name of an old PDS member that does not have a like-named member in the new PDS. This member name, if entered, must be separated from the new-member name by a colon (:).

If the old-member name is not used, SuperC attempts to compare the new-member to a like-named member of the old PDS.

Y2PAST—Year 2000 Global Date Option

Specifies a 100-year period (used for determining the century-part of a date when only a 2-digit year has been specified). The Y2PAST process statement uses either a fixed or sliding window.

Note: The Y2PAST process statement should always be used if any of the Year 2000 Date Definition process statements (NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D, OY2P) have also been used.

Compare Types

LINE

Syntax

Y2PAST *fixed*
sliding

Operand Description

fixed A 4-digit number indicating a fixed window.

sliding A 1-digit or 2-digit number indicating a sliding window.

Example	Description
Y2PAST 1986	A fixed window specifying a 100-year period from 1986 to 2085.
Y2PAST 70	A sliding window specifying (based on the current year being 1997) a 100-year period from 1927 (70 years in the past) to 2026.
Y2PAST 5	A sliding window specifying (based on the current year being 1997) a 100-year period from 1992 (5 years in the past) to 2091.

Compare - Process Statements

SLIST - Statements File Listing Control

Turns on or off the printing of process statements in the output listing. The initial state of the control is "on".

This statement is useful when there are many process statements and the listing of these statements in the summary section is not required for problem determination. For example, a large number of data set selections via SELECT statements would already be indirectly indicated in the group summary listing section. The SELECT statement list would then be redundant and generate extra lines in the listing.

Compare Types

File, Line, Word, and Byte

Examples

SLIST OFF

Does not list the process statements that follow this statement.

Syntax

```
SLIST {ON }  
      {OFF}
```

Operand Description

- | | |
|------------|---|
| ON | Causes the lines in the process statements data set following the SLIST statement to be listed in the output listing. |
| OFF | Causes the lines in the process statements data set following the SLIST statement to be suppressed in the output listing. |

* and .* - Comment Lines (SuperC Listing)

An asterisk as the first character on a process statement line begins a printable comment line. A period-asterisk (.*) as the first 2 characters on a process statement line begins a comment that is not printed in the SuperC listing.

Note: Embedding comments as separate lines in the statements data set is a good programming practice. Period-asterisk comments are useful for inactivating but retaining old statements in a standard statements data set. These statements do not get lost, will not appear in the summary section, and can be reactivated simply by blanking out the period-asterisk characters in columns 1 and 2.

Compare Types: File, Line, Word, and Byte

Examples

```
* This comment prints in the Search-For listing.
.* This comment does not print in the Search-For listing.
```

Syntax

```
{* } comment
{.*}
```

Operand Description

* Must be in column 1.
.* Must be in columns 1 and 2.

SuperC Search-For Process Options

Table 28 lists all of the process options for Search-For.

Table 28. Search-For Process Options

ALLMEMS	ANYC	APNDLST	CKPACKL	COBOL	DPACMT	DPADCMT	DPBLKCL
DPCBCMT	DPCPCMT	DPFTCMT	DPMACMT	DPPLCMT	DPPSCMT	FINDALL	FMSTOP
IDPFX	LMT0	LNFMTO	LONGLN	LPSF	LTO		
MIXED	NOPRTCC	NOSEQ	NOSUMS	SDUPM	SEQ	XREF	

You can enter process options in the **Process Options** field of the Search-For Utility panel or select them from one of two Search-For process options panels.

ALLMEMS

All members. Search all members including alias entries. This functions as though all directory entries were selected from a member list.

ANYC Any case. Lowercase alphabetic characters (a-z) in source data sets are translated to uppercase (A-Z) before Search-For processing (the actual input data sets are not modified).

Notes:

1. ANYC has the lowest priority operation affecting the SuperC process. For example, it does not affect any of the strings used in SuperC compare process statements (except SRCHFOR).
2. The ANYC process option does not apply to characters in DBCS text strings.

Use this option to find all strings such as "ABC", "Abc", "ABc".

Search-For Process Options

APNDLST

The APNDLST process option appends the listing output to the specified or default listing data set. If the data set does not exist, it is allocated as new. Some data sets cannot be appended because of the append listing attributes and Search-For listing attribute requirements. There is an error notification for this condition.

Normally, APNDLST allows you to collect listings from separate searches into one named listing data set (that is, a MOD function). This objective can sometimes be done without using the APNDLST option by using multiple SELECT process statements. This allows you to identify any number of members. It produces a single composite listing with a single Search-For invocation.

CKPACKL

Check for packed format. This option determines if the member or sequential data set has the standard ISPF packed expansion trigger format. If required, Search-For unpacks the input data set or member during the search.

COBOL

Ignore columns 1-6 in F 80 data sets. Data in columns 1-6 are excluded from the search set.

DPACMT

Don't process asterisk (*) comment lines. Lines with an asterisk in column 1 are excluded from the search set. Other forms of assembler comments are unaffected. Hence, it is not possible to have Search-For filter out assembler comments appearing on the same line as an assembler statement or directive.

DPADCMT

Don't process ADA-type comments. ADA comments are whole or part lines that appear after the special "--" sequence. Blank lines are also considered part of the comment set. This option produces a listing with all comments removed and blanked.

DPBLKCL

Don't process blank lines. Source lines in which all of the search columns are blank are excluded from the Search-For set. It is redundant, but not incorrect, to use this option with DPADCMT, DPPLCMT, and DPPSCMT.

Note: The CMPCOLM process statement can be used to control the columns inspected. It is possible to have a line with non-blank data but filtered by the DPBLKCL option due to the column range values specified on the CMPCOLM statement. This may contradict the user assumption that DPBLKCL only excludes complete input blank lines. Another example of this would be a blank line that has sequence numbers in columns 73-80 and the Search-For run with the SEQ process option.

DPCBCMT

Don't process COBOL type comment lines. COBOL source lines with an asterisk in column 7 are excluded from the search set.

DPCPCMT

Don't process C++ end-of-line type compiler comments. These are "//" delimited comments. DPPLCMT may also be used with DPCPCMT when the source file contains "/* ... */" comments delimiters.

DPFTCMT

Don't process FORTRAN type comment lines. FORTRAN source lines with a "C" in column 1 are filtered and excluded from the search set.

DPMACMT

Don't process PC Assembly-type comments. Lines with an "*" in column 1 are excluded.

DPPLCMT

Don't process PL/I-type comments. PL/I, C and REXX comments (that is, /* ... */ and blank lines) are filtered and excluded from the search set. This option produces a listing with all comments removed and partial comments blanked.

Notes:

1. The Search-For program detects most cases including multiline, statement embedded, and most quote dependency comments. However, Search-For may exclude some lines that are not comments. For instance, lines that contain comment delimiters that are enclosed in quotes.
2. The DPPLCMT process option does not recognize comments within DBCS text strings.

DPPSCMT

Don't process PASCAL-type comments. PASCAL-type comments of the type "(* . . . *)" are filtered and excluded from the Search-For set as are blank compare lines. This option will produce a listing with comments removed and part comments blanked. The DPPSCMT process option does not recognize comments within DBCS text strings.

Note: DPPSCMT and DPPLCMT may be required to filter certain non-standard PASCAL compiler comments. The combination is allowed. Either may start a comment but only the starting delimiters type may terminate the comment.

FINDALL

Directs that all strings must be found for return code 1 to be issued. If only some or none of the strings are found then return code 0 is issued.

FMSTOP

Stop the search on the first occurrence of the search string in the data set or PDS member.

IDPFX

Identifier prefixed. ID or member-name is prefixed to the search string lines of the listing.

LMTO

List group member totals only. Lists only the member summary totals and the overall summary totals for the entire data set or group.

LNFMTO

List not-found member or data set totals only. This is a tabular list of members or data sets where the string was not found. It shows the total lines searched.

LONGLN

Long lines. LONGLN causes the Search-For program to create a listing with up to 203 columns, reflecting up to 176 columns from the source data sets. This data set may exceed the maximum number of columns handled by many printers.

Search-For Process Options

LPSF List previous Search-For following lines. Lists the matched string line and up to six preceding and six following lines for context. The LPSFV process statement can be used to change the default value of six preceding and following lines to any value from 1 to 50.

LTO List totals only. Lists the overall summary totals for the entire data set group. Does not list member totals.

MIXED

This option indicates that the input text may be a mixture of both single- and double-byte (DBCS) text. Double-byte strings are recognized and handled differently than if MIXED were not specified. For instance, single-byte characters are not valid within double-byte strings. Special terminals (for example, 5520) allow entry of DBCS characters.

NOPRTCC

No printer control columns. Search-For generates a “normal” listing data set with record lengths of 133 columns, or a LONGLN listing with 203 columns. These listings contain printer control columns and page separators. NOPRTCC eliminates both the page separators and control column 1. With NOPRTCC, “normal” listings are 132 columns, and LONGLN listings are 202. Section separators and title lines are still generated. This data set may be better for online browsing. It is easier to browse listings without interspersed page separator titles.

NOSEQ

No sequence numbers. Search-For processes F 80 standard sequence number columns as data. This option is extraneous for variable length records and non-fixed F 80 attribute data sets.

NOSUMS

No summary listing section. This option omits the summary section including the statistics, options, warning, and error messages from the listing output.

SDUPM

Search duplicate members. Searches all members found in concatenated PDS data sets, even if the members have the same name and are at a higher level. Search duplicate names even if the search is for a single member or if members are specified using the SELECT process statement.

SEQ

Sequence numbers. Ignore F 80 standard sequence number columns. Sequence number column changes in columns 73-80 are ignored with F 80 and columns 1-8 in V 255 records. This is the SuperC default for F 80/V 255 data sets when the compare type is Line. It is not the default for Word compare. SEQ is not valid for any data set that does not have an attribute of F 80/V 255.

XREF

Cross reference strings. Creates a cross reference index listing by search string. You can use XREF with IDPFX, LMT0, LNFMT0, and LTO.

The XREF option can be useful when more than one search string (or search condition) is specified. The XREF listing is implemented using a multiple pass operation for listing the “lines found” for each individual string. Note that XREF adds some additional processing overhead to the normal search process.

SuperC Search-For Process Statements

Table 29 lists all of the Search-For utility process statements.

Table 29. Summary of Search-For Process Statements

CMPCOLM	CMPLINE	DPLINE	DPLINEC	LNCT	LPSFV	LSTCOLM
NCHGT	NTITLE	SELECT	SLIST	SRCHFOR	SRCHFORC	.*
*						

You must include these statements in an input control data set. The process statements data set can be fixed or variable, and its record length can be large, but you must enter process statements only in columns 1 through 72. Only one process statement can be entered per line. Search-For checks process statements and required operands for completeness before beginning a comparison. Comments are not allowed at the end of the line after the statement has been completed. Comment lines must be separate statements.

You can enter process statements in the statements data set more than once (for example, DPLINE, SELECT, or CMPLINE) as they define independent actions to be taken. Others redefine their process scope after their first inclusion (for example, LNCT). Including more than one redefining statement is not recommended but is not reported as an error. There is also no specific rule concerning which statement definition (or redefinition) prevails—the first (least often) or last (most often).

Note: It is best to inactivate old process statements that you do not need rather than deleting them from the statement data set. This can be easily done by putting a period and an asterisk (.*) in the first 2 character positions. These statements will be ignored by the Search-For program when the data set is used as a statement data set.

Process Statement Notation Conventions

This section uses the following notation conventions to describe the syntax of the process statements:

- Process statements and keywords are shown in uppercase to help you differentiate between them and their operands, which are shown in lowercase. However, you can enter them in any case you like.
- Operands shown in brackets ([]) are optional.
- Stacked operands shown in brackets indicate the optional operands from which you can select one or none.
- Stacked operands shown in braces ({ }) are required operands from which you must select one.
- Syntax diagrams that end with an ellipsis (...) allow you to repeat operands more than once.
- If a statement contains a KYWD operand, this keyword must precede any repetition of the operands that follow.

Search-For Process Statements

CMPCOLM - Compare (Search) Columns

Causes a search of the data between column limits of the input data set. Up to 15 search ranges or individual columns are allowed and may be entered on additional CMPCOLM statements. The column values and ranges must be in ascending order.

Examples

CMPCOLM 25:75

Searches columns 25 through 75.

CMPCOLM 30:60,75

Searches columns 30 through 60 and column 75.

CMPCOLM 30:60 75

Performs the same function as the previous statement.

Syntax

CMPCOLM start-colm[:stop-colm][,...]

Operand Description

start-colm

A number that identifies the column in which Search-For begins the search. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which Search-For ends its search. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used.

Note: CMPCOLM is an overall limit value for selecting a range of columns to be searched. SRCHFOR and SRCHFORC statements have optional column limits that override the CMPCOLM process statement, SEQ process option, NOSEQ process option, and COBOL process option limits.

CMPLINE - Compare (Search-For) Lines

Searches a data set between line limits. The reference values may be line numbers or data patterns. The statement can be specified on one complete line or have separate CMPLINE statements for each of the two keyword operands NTOP or NBTM.

Examples

CMPLINE NTOP 55 NBTM 99	Search new data set between lines 55 through 99.
CMPLINE NTOP 'ABCD',5:66	Start new data set search when SuperC detects the first "ABCD" in columns 5 through 69.
CMPLINE NBTM 'ABCD'	End new data set search on first "ABCD" found in any column.

Syntax

```
CMPLINE KYWD {rel-line-#} [ ... ]
      {,'string'[,start-colm[:stop-colm]]}
```

Operand Description

KYWD

The keyword may be one of the following:

NTOP New Top. Defines the beginning line in the new (search) data set.

NBTM

New Bottom. Defines the ending line in the new (search) data set.

rel-line-#

The relative number of the record in the data set or member. Valid range = 1 to 999999.

string Character string enclosed within single quotes. For embedded single quotes, use two consecutive quotes ("). For example, enter 'don't' for the string "don't".

start-colm

A number that identifies the column in which Search-For begins looking for *string*. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which Search-For ends its search for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. This causes a search of a single column for the first character of *string*.

All columns to the right of the column that the last character of *string* can occupy are ignored. For example, if you specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

DPLINE, DPLINEC - Don't Process Lines**DPLINE**

Don't Process Lines

DPLINEC

Don't Process Lines Continuation Condition.

Removes from the search set a line that can be recognized by either a unique character string or combination of related strings all appearing on the same input line. DPLINEC is the continuation of the immediately preceding DPLINE or DPLINEC process statement. All the strings in a DPLINE/DPLINEC sequence must be found on the same input line for the line to be excluded.

A start-column or stop-column can also be used to restrict the columns scanned. Relative start-columns and relative stop-columns are valid only on DPLINEC statements. You can specify a relative start position depending on the ending of the previous DPLINE/DPLINEC in the sequence relationship. Normal scanning starts at the beginning of the input line (resulting in the first found string) unless restricted by user column specifications or the relative operator.

Examples

DPLINE 'ABCDE' DPLINE 'ABCDE',1:99999	Both statements exclude lines containing the string "ABCDE" from the compare set.
DPLINE 'AbCde',2 DPLINE 'AbCde',2:2	Both statements exclude lines where the string "ABCDE" starts in column 2.
DPLINE 'ABCDE' DPLINEC 'BDEF '	Exclude lines that contain the strings "ABCDE" and "BDEF ".
DPLINE 'ABCDE',2:50	Excludes lines where the string "ABCDE" starts in columns 2 through 50.
DPLINE 'AB'CD',2:50	Excludes lines where the string "AB'CDE" starts in columns 2 through 50.
DPLINE X'C1C27BF1',2:50	Excludes lines where the string "AB,1" starts in columns 2 through 50.
DPLINE 'ABC' DPLINEC 'BDEF',+	Exclude lines containing the string "ABC" followed in the same line by the string "BDEF".
DPLINE 'ABC's DPLINEC 'BDEF',+5	Exclude lines containing the string "ABC" and "BDEF" when the string "BDEF" starts in the same line 5 column positions after the end of the string "ABC".

Syntax

DPLINE 'string'[,start-colm[:stop-colm]]

DPLINEC 'string'[,start-colm[:stop-colm]]
[,+start-colm[:+stop-colm]]
[,+]
Operand Description

string Character string enclosed within single quotes. For embedded single quotes, use two consecutive quotes (").

start-colm

A number that identifies the column in which Search-For begins looking for *string*. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which Search-For ends its search

Search-For Process Statements

for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. This causes a search of a single column for the first character of *string*.

All columns to the right of the column that the last character of *string* can occupy are ignored. For example, if you specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

+start-colm

The relative column following the previous "Don't process" string in which Search-For begins the search for *string*.

+stop-colm

The relative column following the previous "Don't process" string in which Search-For ends the search for *string*.

+ Following the previous "Don't process" string, scans to the end of the line for *string* (same as + 1:99999).

Notes:

1. DPLINE and DPLINEC columns are not restricted by search columns. The data patterns are also not affected by the ANYC process option.
2. The relative start operator "+" introduces another important capability of backtrack and retry by advancing the retry starting scan position. Backtrack allows you to identify a string through a sequence of DPLINE/DPLINEC statements and to search a number of similar strings (all on the same line) until the correct sequence is found. This contrasts to the "first found" DPLINE/DPLINEC string and a non-relative DPLINEC rejection when the DPLINEC condition is not met.

Search-For Process Statements

LNCT - Line Count

Specifies the number of lines per page in the listing output. This process option is ignored if NOPRTCC process option is specified. The default value is 55 lines.

Examples

LNCT 66

Lists up to 66 lines per page.

Syntax

LNCT num

Operand Description

num A decimal number between 15–999 999.

LPSFV - LPSF Count Value

Specifies the maximum number of lines to be used with the process option LPSF. This number replaces the default value of up to six lines before and six lines after the line containing the search string. This process statement has no formatting effect if you do not use the LPSF process option.

Examples

LPSFV 2

Lists up to 2 lines before and after the line where Search-For finds the search string.

Syntax

LPSFV num

Operand Description

num A decimal number between 1 and 50.

Search-For Process Statements

LSTCOLM - List Columns

Selects a range of columns to be listed in the output. This statement overrides the Search-For convention of listing lines starting with column 1 from the input source data set.

LSTCOLM column selections must be contiguous and can be no wider than the output listing line without truncation.

Examples

LSTCOLM 20:90

Lists columns 20 through 90 in the output listing.

Syntax

LSTCOLM range

Operand Description

range Two column numbers separated by a single colon (:). Do not leave blanks on either side of the colon.

NCHGT - Change Text of New (Search) Text String

Changes the input source image before performing the search. More than one change text statement may be contained in the statements data set.

The find-mask and replacement string need not be the same length. The replacement string may even indicate a null string. Unequal replacements result in either blank insertions on short replacements (at the end of the found word) or downstream blank deletions to accommodate larger replacements (deleted blanks are selected from downstream blank pairs). The net effect of a longer string replacement of a shorter string shows as a reformat of the original line. The replaced text line appears in the output instead of the input text.

One or more question marks ("??") can be used as "wildcard" characters in the find-mask or string. A wildcard in the output string stores the input character *as is*.

Examples

NCHGT 'ABCD','XXXX'

Changes all "ABCD"s to "XXXX"s (exclude) in the new data set.

NCHGT 'ABCD','XXXX',1:50

Restricts the mask search to columns 1 through 50.

NCHGT 'ABCD','',1:50

Changes string "ABCD" to a null string in columns 1 through 50.

NCHGT X'7B01','':1',6

Uses the hexadecimal string change convention.

NCHGT 'PREF???','NPREF'

Changes the string "PREF" and the wild card characters to the string "NPREF".

NCHGT 'PREF???','NPREF??'

Changes the string "PREF" and the first wild card character to the string "NPREF". The second and third wildcard characters are not changed.

Syntax

NCHGT 'find-mask','string',[start-colm[:stop-colm]]

Operand Description

find-mask

The change text string to be replaced. The find-mask must be in single quotes. Use two consecutive single quotes for quote characters within the find-mask.

string

A character string that is to replace the contents of *find-mask* before a comparison or search. Single quotation marks are required. If the character string contains a single quotation mark, you must enter it in the process statement as two single quotation marks.

You can include one or more question marks in the *string*. It indicates that the position it occupies can be filled by any character, one character per question mark.

If there is not enough space for the string to be substituted, the substitution does not occur. Instead, a warning message is printed at the bottom of the listing.

start-colm

A number that identifies the column in which Search-For begins looking for *string*. All columns to the left of this column are ignored.

Search-For Process Statements

stop-colm

A number that identifies the column in which Search-For ends its search for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. This causes a search of a single column for the first character of *string*.

All columns to the right of the column that the last character of *string* can occupy are ignored. For example, if you specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

Notes:

1. Replacing a string with a longer string is not always possible with some lines. A warning message appears when this happens and the problem change-text statement is designated in the summary section.
2. A string replacement using the "null" character notation does not always work as first envisioned. Nulling a character string only shifts following characters up through the next blank character. One or more blank pad characters are applied to take up the null positions of the original string. Only non-blank character strings are shifted, not entire lines.

```
NCHGT ' ',''
```

```
blank insertion.
```

```
NCHGT '???'',''
```

NTITLE - Alternate Listing Title

NTITLE — listing data set title identification.

Allows you to specify an alternate data set identification in the output listing (54-character limit for each title identifier). This replaces the data set and library names used in the search.

Note: This option is most useful when a single non-group search is done on a temporary data set. The NTITLE identification may be more meaningful than the actual data set names used in the search.

Examples

```
NTITLE 'New Substitution Name'
```

Change the titles in the output listing of the data set.

Syntax

```
NTITLE 'string'
```

Operand Description

string The string can be up to 54 characters and must be delimited by single quotes. Use two consecutive single quotes for each embedded quote. The string is not checked for valid MVS data set name characters.

Search-For Process Statements

SELECT - Select PDS Members

This process statement allows you to specify members to select from a PDS. You can specify as many member names as will fit on one line. Therefore, if you need to select additional members, enter a new SELECT statement.

Examples

```
SELECT PROG1,NEWPROG2,PROG3
```

Selects PDS members PROG1, NEWPROG2, and PROG3 to be searched.

Syntax

```
SELECT new-member[...]
```

Operand Description

new-member

The name of the PDS member that is to be searched.

SLIST - Statements File Listing Control

Turns on or off the printing of process statements in an output listing. The initial state of the control is “on”.

This statement is useful when there are many process statements and the listing of these statements in the summary section is not required for problem determination.

Examples

SLIST OFF

Does not list the process statements that follow this statement.

Syntax

```
SLIST {ON }  
      {OFF}
```

Operand Description

- | | |
|------------|---|
| ON | Causes the lines in the process statements data set following the SLIST statement to be listed in the output listing. |
| OFF | Causes the lines in the process statements data set following the SLIST statement to be suppressed in the output listing. |

SRCHFOR, SRCHFORC - Search for Strings in the Input Files

SRCHFOR

Searches for a text string in the input data set

SRCHFORC

Searches for a text string continuation condition.

Specifies the string and the string type (P - prefix, W - word, S - suffix, or blank - for any occurrence of the string). SRCHFORC is the continuation of the immediately preceding SRCHFOR or SRCHFORC process statement. All the strings in a SRCHFOR/SRCHFORC group must be found on the same input line.

A start-column or start-range can also be used to restrict the columns. Relative start-columns and start-ranges are valid only on SRCHFORC statements.

Examples

SRCHFOR 'ABC'	Searches for string "ABC" within search columns.
SRCHFOR 'ABC',W	Searches for "ABC" as word string.
SRCHFOR X'4004'	Searches for hex string within search columns.
SRCHFOR 'A'bc'	Searches for string "A'bc".
SRCHFOR 'ABC',5:10	"ABC" starts within 5:12 of search columns.
SRCHFOR 'ABC',W,5	Word "ABC" starts in column 5.
SRCHFOR 'ABC' SRCHFORC 'DEF'	Finds "ABC" and "DEF" on same line within the search search columns.
SRCHFOR 'ABC' SRCHFORC 'DEF',+	Finds "DEF" to the right of first "ABC" string.
SRCHFOR 'ABC' SRCHFORC 'DEF',+1:9999	Same as above example.
SRCHFOR 'ABC' SRCHFORC 'DEF',W,+	Same as above, but "DEF" must be a word.
SRCHFOR 'ABC' SRCHFORC 'DEF',+5	Same as above, but "DEF" must start in fifth column after "ABC".
SRCHFOR 'ABC' SRCHFORC 'DEF',+5 SRCHFORC 'GKL'	Same as above, but "GKL" must also be found on the same line.

Syntax

```
SRCHFOR 'string'[,P][,start-colm[:stop-colm]]
[,S]
[,W]
```

```
SRCHFORC 'string'[,P][,start-colm[:stop-colm]]
[,S][,+start-colm[:+stop-colm]]
[,W][,+]
```

Operand Description

- string** Character string enclosed within single quotes. For embedded single quotes, use two consecutive single quotes (").
- P** Prefix. String begins a word, but is not the complete word (Example: string "abc" is a prefix to the word "abcdef").
- S** Suffix. String ends a word, but is not the complete word (Example: string "def" is a suffix to the word "abcdef").
- W** Word. String is a complete word. Words are delimited by blanks, or end-of-line characters.

start-colm

A number that identifies the column in which Search-For begins looking for *string*. All columns to the left of this column are ignored.

stop-colm

A number that identifies the column in which Search-For ends its search for *string*, but only for that record. If the data set contains more records, the search continues with the next record, beginning with the column specified as the start-colm.

This number is separated from the start-colm value by a colon (:). All columns to the right of this column are ignored. If the colon and stop-colm are not entered, only the start-colm value is used. This causes a search of a single column for the first character of *string*.

All columns to the right of the column that the last character of *string* can occupy are ignored. For example, if you specify 'ABCD' as a string that must exist between columns 5 and 69, the search really includes columns 5 to 72. Therefore, the string can be found even if the first character is in column 69, with the others in columns 70, 71, and 72.

+start-colm

The relative column (starting from the column where the string of SRCHFOR/SRCHFORC ended) in which the string must start for the multiple statement relation to be met. Only SRCHFORC statements can contain relative start-columns.

+stop-colm

The number that identifies the relative column (starting from the column where the string of the last SRCHFOR/SRCHFORC ended) in which Search-For ends its search for *string*. Only SRCHFORC statements can contain a relative stop-colm.

+ Continues the scan after the pattern to the end of the line (same as +1:99999).

Search-For Process Statements

* and .* - Comment Lines (Search-For Listing)

An asterisk as the first character on a process statement line begins a printable comment line. A period-asterisk (.*) as the first two characters on a process statement line begins a comment that is not printed in the Search-For listing.

Note: Embedding comments as separate lines in the statements data set is a good programming practice. Period-asterisk comments are useful for inactivating but retaining old statements in a standard statements data set. These statements do not get lost, will not appear in the summary section, and can be reactivated simply by blanking out the period-asterisk characters in columns 1 and 2.

Examples

```
* This comment prints in the Search-For listing.  
.* This comment does not print in the Search-For listing.
```

Syntax

```
{* } comment  
{.*}
```

Operand Description

- * Must be in column 1.
- .* Must be in columns 1 and 2.

Return Codes

Results from calling the SuperC program are returned as condition codes from SuperC. The SuperC and SuperCE utilities generate a short message and a long message to interpret the results for you. However, only the long message displays the return codes, which are:

- 0 Normal completion. No differences were found in the input data sets.
- 1 Normal completion. Differences were found in the input data sets.
- 4 Warning. Erroneous or conflicting input options were detected by the SuperC program. Data sets were compared, but should be checked for results consistent with those expected. Check listing for more details.
- 6 Warning. The old data set did not contain proper sequence numbers, or the sequence number intervals were not large enough to contain insert activity. This return code applies only to results from the UPDCMS8, UPDMVS8, and UPDSEQ0 process options.
- 8 Error. Error on old input data set. The data sets were not compared. Check output for more information.
- 12 Error. Inconsistent data set organizations. The new and old data sets are not both PDSs or sequential data sets. The compare was not run.
- 16 Error. Error on new input data set. The data sets were not compared. Check output for more information.
- 20 Warning. Error on update data set; one of the following:
 - Missing DELDD
 - I/O error
 - Append to PDS
 - Incorrect attributes on an append or PDS output operation.

Processing was completed with the update options reset and ignored. The error can also be returned if an update data set is being used simultaneously as the listing data set.

- 24 Error. Error occurred during open or during writing to the listing data set. The error can also be returned because of a new or old input data set simultaneously being used as the listing data set. No additional information is generated to better define the error condition.
- 25 Error. The listing data set was not allocated because of a conflict with the logical record length (LRECL), record format (RECFM), or data set organization. A listing can be saved only in a PDS that has the same LRECL or RECFM; a listing can never be appended to a PDS by using the APNDLST process option; a listing can be appended by using the APNDLST process option only to a sequential data set that has the same LRECL or RECFM. No output was generated.

SCLM Version Compare considerations

This return code is expected if the listing data set is partitioned but the member name is omitted. Correct the specification and try again.

- 26 Error. The listing data set could not be extended and is full (E37 condition). The results are truncated and incomplete.
- 28 Error. No data was compared because the old and new data sets were empty. Member names were invalid or there was nothing left to compare after input filtering. See the listing for more information.
- 32 Error. Insufficient storage was available for the SuperC program to run. The user region size was either too small or storage was too fragmented.

SuperC and Search-For Technical Overview

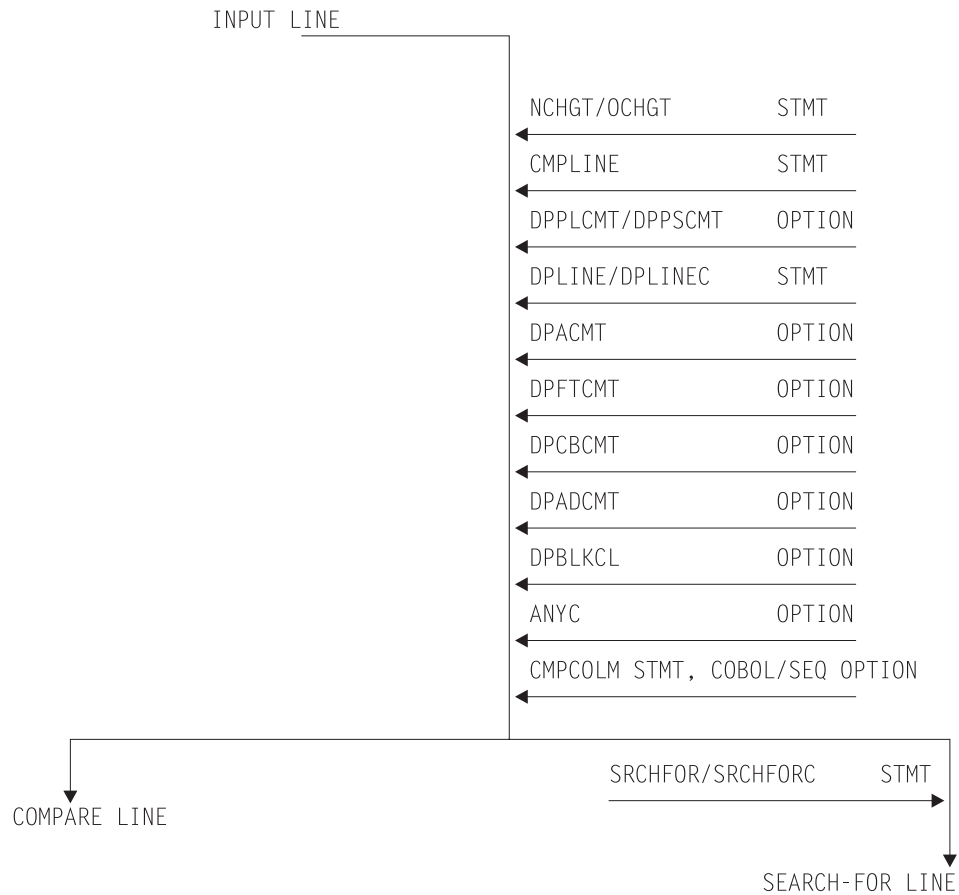
This section describes the following SuperC and Search-For processes:

- How SuperC and Search-For filter input file lines
- How SuperC matches input file lines
- How SuperC partitions and processes large files
- Why SuperC compare types may produce different results
- How to directly invoke the SuperC and Search-For programs.

How SuperC and Search-For Filter Input File Lines

The SuperC and Search-For utilities apply process options and process statements to the input file or files in a specific order. Figure 230 on page 454 shows schematically the effects, in the order that they occur, of the various “filtering” process options and process statements, on the compare and Search-For input lines. The options and statements nearer the top affect the input line before options or statements nearer the bottom.

SuperC/Search-For Technical Overview



- Both options and statements “filter” the input lines.
- “Filtered” input lines are passed to either compare or Search-For processing.

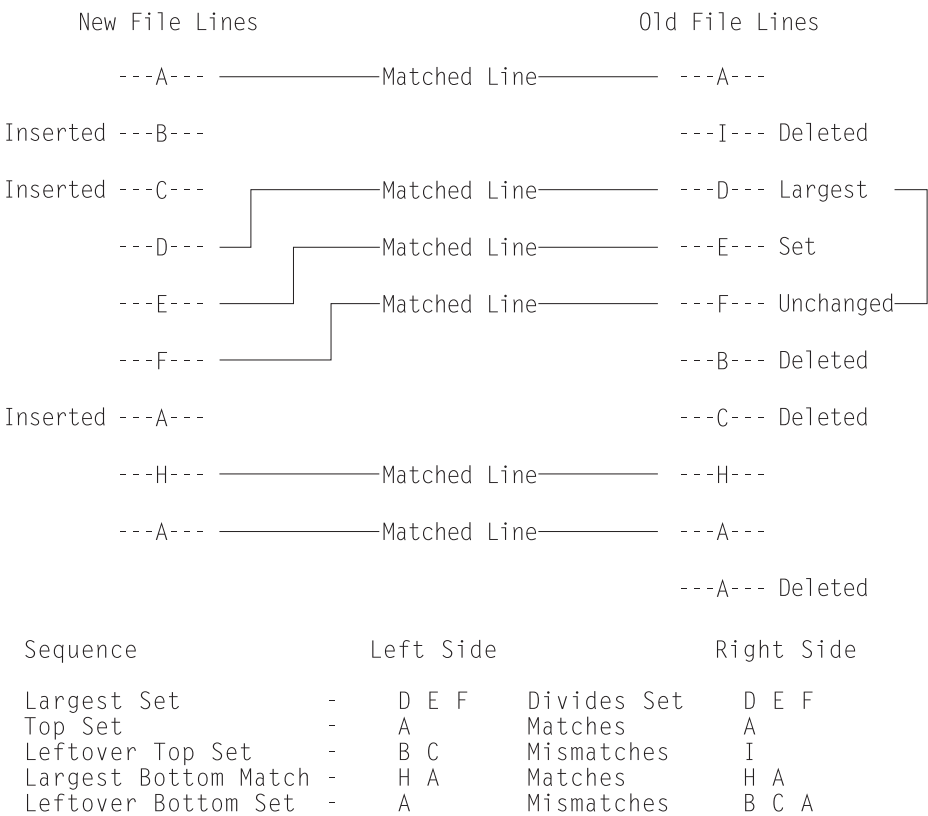
Figure 230. Priority for Filtering Input Lines

How SuperC Matches Input Files

When SuperC compares files, it determines matching and missing lines or words based only on the data content of the input files. It does not use any synchronization data, such as column or sequence numbers, to find matching file sections. It does not use the common “start at the top”, then look-ahead or look-back method to determine large sections of matching data. Neither does it sort the data before comparing.

SuperC is unique in that, except for files that are identical, it does not determine matching sections until it has completely read both files. Missing data units are units that are out of sequence, as opposed to units that have been deleted from a file. During a comparison, SuperC finds all matches, locates the largest set of matching data units, and recursively allows this compare set to divide the file into additional partitioned subsections. All new subsections are processed for corresponding matches. The subprocess ends when no more matches can be found within corresponding *new* and *old* file partitioned subsections. Sections classified as inserted or deleted are corresponding areas for which SuperC could not find a match.

Figure 231 shows an example of a comparison of two files that are identified as having lines represented by A, B, C, ... F. The SuperC algorithm attempts to find the best match set from the input lines. Notice how the match set requires consideration of duplicate lines.



Note: The inserted “A” on the lower left cannot connect with the deleted “A” on the bottom right due to H A barrier.

Figure 231. Find Match Example

How SuperC Corrects False Matches

Occasionally, SuperC reports that it has detected a false line or word match and has corrected the results in the listing and summary report. Any affected matched pair has been reclassified as an insert/delete pair. Any resulting error might be in the masking of potential matches that would be overlooked due to the early false match coupling. That is an equivalent yet undiscovered match may be overlooked due to the premature false matching. The condition should be of minor importance since it happens so rarely and the masking effect has a low probability of affecting the final results.

An equally important SuperC concern would be whether it finds the best match set and whether it finds all matches. Unfortunately, the match-finding algorithm is not perfect. Ignoring the false match masking problem, and the large number of duplicate source lines obscuring the match set possibilities, occasional matches can be overlooked.

Many Artificial Intelligence (AI) computer programs, like SuperC, only approximate the human intellect that can sometimes make a better match set selection. Furthermore, these same computer programs are designed for speed and efficiency. They necessarily make certain simplifying assumptions and contain

additional operational weaknesses. SuperC , however, does not fail to correctly classify mismatches and does not incorrectly classify a mismatch as a match.

How SuperC Partitions and Processes Large Files

In SuperC, there is no limit on the size of files processed in terms of lines, words or bytes. Yet it had an internal methodology based upon a maximum field size for each work area storage structure (for example, array size and precision of variables). A method was developed to do the overall comparison process by breaking very large files into smaller comparison partitions and combining the intermediate results into one overall result. The process had to be done carefully so that it did not look as if the file partitioning was determined after some arbitrary limit was reached. That could affect the results on either side of the break point. The partitioning had to be done heuristically based upon the comparison results from the previously inspected intermediate process.

A fixed partitioning size of 32K lines/words/bytes was selected that was based on some test studies. The compare processes up to this limit and iteratively adjusts the intermediate ending break point of the pass by an adaptive method. Continuation from the adjusted end point is the basis for the next pass. That end point might even be adjusted to some previous records that had already been processed. The objective is to achieve the next best compare set for future unprocessed records.

The overall process ends when both files reach the End-of-File during a pass. The results from the intermediate passes are combined into one user end result. Most large compares are never suspected to have been partitioned and recombined.

The unlimited file size solution may appear, at first, unnecessary for Line compare using a virtual address space that is nearly unlimited. Yet there often has to be some limit—even if it is a high value. Programs need to store data with predetermined precision limits and programs work better with limits that are reasonable. Word compare and Byte compare eventually needed a partitioning limit for the compare as the number of words and bytes become large even for small file sizes.

Why Compare Types May Produce Different Comparison Results

Different comparison types often give you slightly different results. Here are some of the reasons:

- File comparisons inspect the complete data set (every byte) for differences. Line and Word comparisons use designated columns that are either the user specifications or SuperC defaults—possibly excluding sequence number columns 73–80.
- Line comparisons pad records with blanks when lines with different lengths are compared. However, Byte comparisons can find blank characters only if they are included in the input data sets.
- For data sets with input line lengths ≤ 256 , Line comparison is done after the lines are padded with blanks to the longest line length. Lines originally of unequal length can compare equally if the blanks at the end of the longer line coincide with the shorter line's blank padding.
- For data sets with input line lengths > 256 , Line comparison is done on the lines without blank padding. Lines of unequal length are always mismatches.
- Different comparison types have different sensitivity to being resynchronized. Line comparison synchronization begins at the beginning of a line and ends at

the end of a line. Word comparison synchronization begins anywhere on a line on any word boundary and ends at the end of a word. Byte comparison synchronizes after each character.

Word comparisons at the end of a line might change the size of the word comparison set but would have no effect on a Line comparison. The output reports could look very different.

- Line comparisons may produce different results because SuperC detects lines that have been reformatted. Reformatted lines have no effect on Word comparisons because Word comparisons ignore blank characters and blank lines.
- Results may differ depending on which compared data set is specified as new and which is specified as old. The matching algorithm is sensitive to the largest matched set it finds between data sets. There may be occasions where this set has alternatives of equal lengths. The rules for deciding which set to choose among the equals depend upon the actual content in the data set; therefore, data set dependencies do exist.

Comparing and Searching Alias Members

When you compare or search all of the members of two partitioned data sets using the command **S *** (to select all entries in the directory) on the member list, any members that have alias entries are processed once for the real name, and once for each alias entry. For compare, unpaired aliases appear in the same list as unpaired real members as *NON-PAIRED NEW FILE MEMBERS* or *NON-PAIRED OLD FILE MEMBERS*.

When you compare or search entire data sets by using an asterisk (*) for a member name pattern, only real members, not aliases, are processed. For compare, all directory entries (for both real members and aliases) are analyzed. Messages appear at the end of the SuperC output listing that give information about unpaired alias entries for paired real members as follows:

```
"NEW" PAIRED MEMBERS WITH "NEW" ALIAS MEMBERS NOT PAIRED FOLLOW:
      MEMBER1/ALIAS1  MEMBER1/ALIAS2  MEMBER2/ALIAS1 ...
or
"OLD" PAIRED MEMBERS WITH "OLD" ALIAS MEMBERS NOT PAIRED FOLLOW:
      MEMBER1/ALIAS1  MEMBER1/ALIAS2  MEMBER2/ALIAS1 ...
```

followed by a listing of the unpaired member/alias entries.

Notes:

1. Consider the ALLMEMS process option if you want to compare all directory entries, including aliases, but do not want to select them from a member list. This is useful for batch comparisons of entire load modules.
2. This listing section is not created for non-load module data sets containing alias entries.

Comparing Load Modules

SuperC compare of load module data might show unexpected differences. This is because SuperC compares all the data in the load module as it is found on DASD, and does not attempt to decode which portions are executable, and which might contain uninitialized storage.

The complex data format on DASD is dependent on the load module data set block size, and defined storage definitions which are controlled by the linkage

SuperC/Search-For Technical Overview

editor. The size stored by the linkage editor in the PDS directory may differ from the DASD data byte count reported by SuperC and Browse depending on the characteristics of the load module.

If load modules are exact copies of each other, SuperC should find no differences. If load modules have been link-edited from the same object but with different block sizes, SuperC will probably report they are different.

Because of the relative DASD addresses (TTRs) in load modules, the recommended procedure for comparing load modules which have not been reblocked is to use the AMBLIST utility with LISTLOAD OUTPUT=MODLIST against both load modules, then use SuperC to compare the two AMBLIST outputs. There is no easy way to compare load modules with different internal record sizes such as occurs when COPYMOD or LINKEDIT processes them.

Comparing CSECTs

SuperC compare of PDS Load Module Csects (using the LMCSFC Process Option) can return unexpected differences. SuperC looks at the length of the Csect from the control record immediately preceding the Csect data record in the load module. This physical data length can differ from the logical Csect data length in the load module header that the AMBLIST utility uses to report the length of the Csect.

SuperC always compares all of the physical data in each Csect. You can use SuperC Byte compare to examine the Csect data content in detail.

Note: This option is only valid for PDS load modules.

How to Directly Invoke SuperC and Search-For

You can run the SuperC and Search-For programs directly without using the ISPF-provided utilities (Options 3.12, 3.13, 3.14, or 3.15). This requires an installation (or system programmer) to customize a CLIST (for interactive usage) or a PROCLIB procedure (for batch execution of a catalog procedure). Although these methods are not warranted by the ISPF product, a sample CLIST and a sample PROCLIB procedure are distributed as an aid in the SAMPLIB data set as members ISRSCLST and ISRSPROC.

The sample CLIST allows a TSO user to enter a line command to communicate the operational parameters directly to the SuperC program without displaying the ISPF panels. The sample CLIST will request entry of a search pattern or string. A sample SuperC call as entered on the terminal might look like:

```
superc newfile(.newdata.file) oldfile(ludlow.olddata.file)
```

or

```
exec clist(superc) 'new(.newdata.file) old(ludlow.olddata.file)'
```

where *superc* is the command and *newfile* and *oldfile* are the keywords for the input files.

The SuperC load module may be supported using a private library or a concatenated system library. The installation is responsible for making the corresponding changes to the sample CLIST.

The sample CLIST uses the following format:

```
SUPERC NEW(dsn) OLD(dsn) {keyword(parameter) .... }
```

The keywords and parameters are:

CTYPE

Specifies the compare type. The parameter can be one of the SuperC compare types (File, Line, Word, or Byte). To call the Search-For program, use CTYPE(SRCH).

LISTING

Specifies the listing type. The parameter can be one of the SuperC listing types.

OUTDD

Specifies the name of the Listing Data Set. Use a fully qualified *dsn* or use a period (.) to precede the *dsn* with SYSPREF. The use of the period is a compromise because fully qualified names enclosed in quotes are difficult to pass in CLISTS.

BROWSE

Specifies the auto display program.

SYSIN

Specifies whether SuperC prompts the user for the process statements or uses a statements data set. The parameters can be PROMPT or the name of the statements data set.

DELDD

Specifies the name of the update data set.

PROCESS

Specifies the process options. The parameter can be a SuperC or Search-For process option. Not all options are allowed with each compare type (for example, GWCBL is valid only with Line and Word compare) or with other options (for example, you cannot use SEQ with COBOL). Refer to “SuperC Compare Process Options” on page 391 and “SuperC Search-For Process Options” on page 433 for additional information.

Examples

The following example shows a SuperC compare JCL sequence:

```
//COMPARE EXEC PGM=ISRSUPC,PARM=('LINECMP,CHNGL,UPDCNTL')
//STEPLIB DD DSN=ISPF.LOAD,DISP=SHR
//NEWDD DD DSN=DLUDLOW.PDS(TEST1),DISP=SHR
//OLD DD DSN=DLUDLOW.PDS(TEST2),DISP=SHR
//OUTDD DD SYSOUT=A
//DELDD DD DSN=DLUDLOW.UCTL1,DISP=OLD
//SYSIN DD *
        CMPCOLM 2:72
/*
```

The sequence allows the SuperC program to compare two input data sets and generates a line compare CHANGE type listing to the spool output queue and a separate UPDCNTL update control data set output using source columns 2 through 72.

A catalog procedure is a set of “canned” JCL statements that you can invoke as an extension of your own JCL. A simplified JCL sequence appears below:

```
//SUPERC JOB
// EXEC SUPERC,
// NEWFILE='DLUDLOW.GROUP.DATA1',
// OLDFILE='MFRAME.GROUP.DATA2',
// LISTING=DELTA
```

SuperC/Search-For Technical Overview

The keywords NEWFILE, OLDFILE, and LISTING cause symbolic substitution prior to the job submittal.

Note: A sample catalog procedure is contained in the SAMPLIB member ISRSPROC.

A simplified Search-For JCL sequence follows. The SRCHFOR process statement used in the search is part of the JCL instead of a separate SYSIN data set. Concatenated data sets are also shown as part of the JCL.

```
//          JOB
//SEARCH    EXEC PGM=ISRSUPC,PARM=('SRCHCMP,ANYC')
//STEPLIB   DD   DSN=ISPF330.LOAD,DISP=SHR
//NEWDD     DD   DSN=USERID.PDS,DISP=SHR
//          DD   DSN=USERID.PDS2,DISP=SHR
//OUTDD     DD   SYSOUT=*
//SYSIN     DD   *
SRCHFOR 'NEEDLE',W,10:20
/*
//
```

A very simplified Search-For sample CLIST follows:

```
PROC 0
FREE  FI(NEWDD,SYSIN,OUTDD,SYSIN2)
ALLOC FI(NEWDD) DA('USERID.PDS(TEST1)')          REUSE SHR
ALLOC FI(SYSIN) DA('USERID.SYSIN.DATA(STMTS)')    REUSE SHR
DELETE 'USERID.USER.PDS'
ALLOC FI(OUTDD) DA('USERID.USER.LIST') SPACE(10,20) RECFM(F B) +
REUSE TRACKS RELEASE
CALL 'USERID.ISPF.LOAD(ISRSUPC)' 'SRCHCMP,ANYC'
/*****/
/* SIMPLE CLIST WITH MINIMUM STATEMENTS.          */
/* "USERID.SYSIN.DATA(STMTS)" MUST CONTAIN SRCH STMTS.*/
/*****/
```

Appendix B. SuperC Listings

The SuperC program allows you to produce four kinds of listings, differing generally depending on the compare type, process options, and process statements used. They range from OVSUM, which shows none of the source data, to LONG, which shows all of it.

Note: Listing types are not applicable for the File compare type. For information about File compare listings, see “Effect of File Compare Type on SuperC Listings” on page 471.

OVSUM

Lists only an overall summary of the results of the comparison without showing the differences themselves.

For example, an OVSUM listing of a Line comparison shows how many lines matched, how many were reformatted, how many were inserted, and so forth.

DELTA

Lists only the differences between the source data sets or members being compared, followed by overall summary results. Differences are flagged to the left of each output line.

For example, a DELTA listing of a Line comparison shows only the individual lines in each data set or member that are different.

CHNG

Same as the DELTA listing, plus up to 10 matching lines, words, or bytes before and after the differences. This shows the differences within the context of the surrounding lines.

For example, suppose a comparison of two data sets shows that each has 15 lines that match, followed by one or more lines that are different, followed by 15 more lines that match. A CHNG listing of a Line comparison of these data sets would show the lines in each data set or member that are different, plus 10 of the 15 lines that match, both before and after.

LONG

Same as the CHNG listing, except this listing shows the entire new data set, plus any data from the *old*, or original, data set that is not in the *new*, or changed, data set.

If we borrow the example used in the CHNG listing definition, a LONG listing would include all 15 matching lines, not just 10.

The following sections begin by explaining the information displayed in the titles lines and at the bottom of the listings. Then, each listing type is discussed in more detail, with examples of listings and descriptions of the listing sections.

The examples were created by comparing two PDSs. The first, USERID.TEST1.SCRIPT, is considered the old data set and contains members DATA, ABEOLD, and WORDSOLD. USERID.TEST2.SCRIPT, the new data set, contains members DATA, ABENEW, and WORDSNEW.

SuperC Listings

DATA, as the only member name common to both data sets, is the only member compared. Figure 232 shows the source data for both the old and new versions of DATA. Figure 233 shows the results of an OVSUM comparison of the two versions.

```

File Edit Confirm Menu Utilities Compilers Test Help
-----
EDIT      USERID.TEST1.SCRIPT(DATA) - 01.02          Columns 00001 00072
*****  ***** Top of Data *****
000100 This line is reformatted; the spacing in the "new" member differs.
000200 This line is the same in both members.
000300 This line differs from the text in the "new" member.
000400 This line is the same in both members.
Command ==> _____ Scroll ==> PAGE
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap      F10=Left     F11=Right     F12=Cancel
. . . . .
File Edit Confirm Menu Utilities Compilers Test Help
-----
EDIT      USERID.TEST2.SCRIPT(DATA) - 01.02          Columns 00001 00072
*****  ***** Top of Data *****
000100 This line is reformatted; the spacing in the "new" member differs.
000200 This line is the same in both members.
000300 This line is different from the text in the "old" member.
000400 This line is the same in both members.
000500 This line is in the "new" member, but not in the "old".
*****  ***** Bottom of Data *****
Command ==> _____ Scroll ==> PAGE
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap      F10=Left     F11=Right     F12=Cancel

```

Figure 232. Split Screen Showing Source Data for SuperC Listings

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31 9.44	PAGE 1
	NEW: USERID . TEST2 . SCRIPT(DATA)	OLD: USERID . TEST1 . SCRIPT(DATA)
LINE COMPARE SUMMARY AND STATISTICS		
2	NUMBER OF LINE MATCHES	3 TOTAL CHANGES (PAIRED+NONPAIRED CHNG)
1	REFORMATTED LINES	2 PAIRED CHANGES (REFM+PAIRED INS/DEL)
2	NEW FILE LINE INSERTIONS	1 NON-PAIRED INSERTS
1	OLD FILE LINE DELETIONS	0 NON-PAIRED DELETES
5	NEW FILE LINES PROCESSED	
4	OLD FILE LINES PROCESSED	
LISTING - TYPE = OVSUM COMPARE - COLUMNS = 1 : 72 LONGEST LINE = 80		
PROCESS OPTIONS USED : SEQ(DEFAULT)		

Figure 233. OVSUM Listing of a LINE Comparison of Two PDS Members

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 1
NEW:	USERID , TEST2 , SCRIPT(DATA)	OLD:	USERID , TEST1 , SCRIPT(DATA)
LISTING OUTPUT SECTION (LINE COMPARE)			
ID	SOURCE LINES	TYPE	LEN N - LN# O - LN#
----	-----1-----2-----3-----4-----5-----6-----7-----		
RN -	This line is reformatted: the spacing in the "new" member differs.	00010000	RFM= 1 00001 00001
RO -	This line is reformatted: the spacing in the "new" member differs.	00010000	
I -	This line is different from the text in the "old" member.	00030000	MAT= 1
D -	This line differs from the text in the "new" member.	00030000	RPL= 1 00003 00003
I -	This line is in the "new" member, but not in the "old".	00050000	MAT= 1
			INS= 1 00005 00004
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 2
NEW:	USERID , TEST2 , SCRIPT	OLD:	USERID , TEST1 , SCRIPT
MEMBER SUMMARY LISTING (LINE COMPARE)			
CHNG MEMBERS - COMPARED NEW-PROC OLD-PROC MATCHED NEW-INS OLD-DEL REFM-LN N-DP-LN O-DP-LN			
**	DATA	5	4 2 2 1 1
1	TOTAL MEMBER(S) PROCESSED AS A PDS		
1	TOTAL MEMBER(S) PROCESSED HAD CHANGES		
0	TOTAL MEMBER(S) PROCESSED HAD NO CHANGES		
2	TOTAL NEW FILE MEMBER(S) NOT PAIRED		
2	TOTAL OLD FILE MEMBER(S) NOT PAIRED		

Figure 234. DELTA Listing of a LINE Comparison of Two PDSs (Part 1 of 2)

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 3
NEW:	USERID , TEST2 , SCRIPT	OLD:	USERID , TEST1 , SCRIPT
MEMBER SUMMARY LISTING (LINE COMPARE)			
NON-PAIRED NEW FILE MEMBERS		NON-PAIRED OLD FILE MEMBERS	
ABENew		ABEOld	
WORDsNew		WORDsOld	
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 4
NEW:	USERID , TEST2 , SCRIPT	OLD:	USERID , TEST1 , SCRIPT
PDS LINE OVERALL TOTALS			
2	NUMBER OF LINE MATCHES	3	TOTAL CHANGES (PAIRED+NONPAIRED CHNG)
1	REFORMATTED LINES	2	PAIRED CHANGES (REFM+PAIRED INS/DEL)
2	NEW FILE LINE INSERTIONS	1	NON-PAIRED INSERTS
1	OLD FILE LINE DELETIONS	0	NON-PAIRED DELETES
5	NEW FILE LINES PROCESSED		
4	OLD FILE LINES PROCESSED		
LISTING - TYPE = DELTA COMPARE - COLUMNS = 1 : 72 LONGEST LINE = 80			
PROCESS OPTIONS USED : SEQ(DEFAULT)			

Figure 234. DELTA Listing of a LINE Comparison of Two PDSs (Part 2 of 2)

SuperC Listings

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 1
NEW:	USERID . TEST2 . SCRIPT(DATA)	OLD:	USERID . TEST1 . SCRIPT(DATA)
LISTING OUTPUT SECTION (WORD COMPARE)			
ID	SOURCE LINES (COMPARED COLUMNS)	N-LN#	O-LN#
This line is reformatted: the spacing in the "new" member differs.		00001	00001
This line is the same in both members.		00002	00002
MC-	This line from the text in the member.	00003	00003
IC-	is different "old"	00003	00003
DC-	differs "new"	00003	00003
This line is the same in both members.		00004	00004
I-	This line is in the "new" member, but not in the "old".	00005	00004
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 2
NEW:	USERID . TEST2 . SCRIPT	OLD:	USERID . TEST1 . SCRIPT
MEMBER SUMMARY LISTING (WORD COMPARE)			
CHNG MEMBERS - COMPARED NEW-PROC OLD-PROC MATCHED NEW-INS OLD-DEL N-DP-LN O-DP-LN N-LN-PRC LN-INS O-LN-PRC LN-DEL			
**	DATA	50	37 35 15 2 5 2 4 1
1 TOTAL MEMBER(S) PROCESSED AS A PDS			
1 TOTAL MEMBER(S) PROCESSED HAD CHANGES			
0 TOTAL MEMBER(S) PROCESSED HAD NO CHANGES			
2 TOTAL NEW FILE MEMBER(S) NOT PAIRED			
2 TOTAL OLD FILE MEMBER(S) NOT PAIRED			

Figure 235. LONG Listing of a Word Comparison of Two PDSs (Part 1 of 2)

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 3
NEW:	USERID . TEST2 . SCRIPT	OLD:	USERID . TEST1 . SCRIPT
MEMBER SUMMARY LISTING (WORD COMPARE)			
NON-PAIRED NEW FILE MEMBERS NON-PAIRED OLD FILE MEMBERS			
ABENew ABEOLD			
WORDSNOW WORDSOLD			
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 4
NEW:	USERID . TEST2 . SCRIPT	OLD:	USERID . TEST1 . SCRIPT
PDS WORD OVERALL TOTALS			
35	NUMBER OF WORD MATCHES	15	TOTAL CHANGES (PAIRED+NONPAIRED CHNG)
15	NEW FILE WORD INSERTIONS	2	NEW FILE LINES CHANGED/INSERTED
2	OLD FILE WORD DELETIONS	1	OLD FILE LINES CHANGED/DELETED
50	NEW FILE WORDS PROCESSED	5	NEW FILE LINES PROCESSED
37	OLD FILE WORDS PROCESSED	4	OLD FILE LINES PROCESSED
LISTING - TYPE = LONG COMPARE - COLUMNS = 1 : 80 LONGEST LINE = 80			
PROCESS OPTIONS USED : SEQ			

Figure 235. LONG Listing of a Word Comparison of Two PDSs (Part 2 of 2)

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	12.31	PAGE 1
	NEW: NEW.DATA		OLD: OLD.DATA
LISTING OUTPUT SECTION (LINE COMPARE)			
ID	SOURCE LINES	TYPE	LEN N-LN# O-LN#
Account	Birth		
Number	Date		
I - 111222	19970101	Jones	MAT= 1
D - 111222	970201	Jones	RPL= 1 00002 00002
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	12.31	PAGE 2
	NEW: NEW.DATA		OLD: OLD.DATA
LINE COMPARE SUMMARY AND STATISTICS			
1	NUMBER OF LINE MATCHES	1	TOTAL CHANGES (PAIRED+NONPAIRED CHNG)
0	REFORMATTED LINES	1	PAIRED CHANGES (REFM+PAIRED INS/DEL)
1	NEW FILE LINE INSERTIONS	0	NON-PAIRED INSERTS
1	OLD FILE LINE DELETIONS	0	NON-PAIRED DELETES
2	NEW FILE LINES PROCESSED		
2	OLD FILE LINES PROCESSED		
LISTING - TYPE = DELTA COMPARE - COLUMNS = 1: 72 LONGEST LINE = 80			
PROCESS OPTIONS USED : SEQ(DEFAULT)			
THE FOLLOWING PROCESS STATEMENTS (USING COLUMNS 1: 72) WERE PROCESSED:			
COLHEAD 'Account', 'Number', 1:8, N 7:11 P 0 11:50 P			
COLHEAD 'Birth', 'Date', 10:20, N 7:11 P 0 7:10 P			
COLHEAD 'Surname', 22:61, N 12:51 P 0 11:50 P			

Figure 236. Comparison Listing with Column Headings (Using COLHEAD)

Figure 236 shows how COLHEAD process statements have been used to generate column headings (*Account Number*, *Birth Date*, and *Surname*) for the corresponding input data. For more information, see “COLHEAD—Define Column Headings” on page 414.

SuperC Listing Title Lines

SuperC listings contain two title lines. Figure 234 on page 463 shows an example. The first title line shows the following information:

- The name of the SuperC program, which is described as a file/line/word/byte/s for the compare utility for ISPF for OS/390.
- The date and time the listing was produced. The date is shown according to the format used by your country. The time is shown in 24-hour format, with the hours and minutes separated by a period.
- The page number.

The second title line shows you the names of the new and old data sets that were compared when the listing was created.

Listing Output Section

The Listing Output Section shows any lines, words, or bytes that were found to be different, depending on the compare type being used. For a Word comparison, the source lines that appear in the listing show only the columns of data that were really compared. See Figure 235 on page 464 for an example and *ISPF User's Guide* for more information.

The Listing Output Section flags changes by using:

- Listing prefix codes
- Type-of-difference codes.

Listing Prefix Codes

SuperC output lines are flagged with the following prefix codes listed under the ID column:

- blank** *Match*—No prefix code means the data is the same in both data sets.
- I** *Insert*—Data that is in the new data set, but not in the old data set.
- D** *Delete*—Data that is in the old data set, but not in the new data set.
- DR** *Delete Replace*—For Byte compare listings only. A byte(s) in the old data set that was replaced by the byte(s) shown in the preceding insert (I) line.
- MC** *Match Compose*—For Word compare listings only. A line containing words that match. The line may also contain spaces to show the relationship between the matching words and any inserted or deleted words. Inserted and deleted words are shown in following insert compose (IC) and delete compose (DC) lines.
- IC** *Insert Compose*—For Word compare listings only. A line containing words from the new data set that are not in the old data set. This line usually follows a match compose (MC) line.
- DC** *Delete Compose*—For Word compare listings only. A line containing words from the old data set that are not in the new data set. This line usually follows a match compose (MC) or insert compose (IC) line.
- IM** *Insert Matching*—For compare listings created by using the FMVLNS (flag moved lines) process option. A line in the new data set that also appears in the old data set, but has been moved. If the line was reformatted, this is shown by a flag to the right of the listing.
- DM** *Delete Matching*—For compare listings created by using the FMVLNS (flag moved lines) process option. A line in the old data set that also appears in the new data set, but has been moved. If the line was reformatted, this is shown by a flag to the right of the listing.
- RN** *Reformat New*—For Line compare listings only. A reformatted line in the new data set. This line contains the same data as the old data set line, but with different spacing.
- RO** *Reformat Old*—For Line compare listings only. A line in the old data set that has been reformatted in the new data set. To keep this line out of your output listing, use the DLREFM (delete reformatted line) process option.
- I** *Change Bar*—For compare listings created by using the GWCBL (generate Word change bar listing) process option. A change bar showing that words were either inserted or deleted. Figure 237 on page 467 provides an example.

Type-of-Difference Codes

At the far right of some listings are headings that provide additional information about the types of differences SuperC has found. Headings you may see are:

- TYPE** An abbreviation that identifies the type of difference:
 - MAT=** Matched lines.
 - RFM=** Reformatted lines.
 - RPL=** Replaced lines.
 - INS=** Lines that are in the new data set, but not in the old data set.

DEL= Lines that are in the old data set, but not in the new data set.

IMR= Lines in the new data set that have been moved from where they were in the old data set and reformatted. Listing should show a matching DMR= flag for a line in the old data set.

DMR=

Lines in the old data set that have been moved and reformatted in the new data set. Listing should show a matching IMR= flag for a line in the new data set.

IMV= Lines in the new data set that have been moved from where they were in the old data set. Listing should show a matching DMV= flag for a line in the old data set.

DMV=

Lines in the old data set that have been moved in the new data set. Listing should show a matching IMV= flag for a line in the new data set.

LEN The number of consecutive lines flagged by one of the TYPE abbreviations.

N-LN# and O-LN#

The line number(s) where the flagged line appears in either or both data sets. For insertions, the O-LN# column shows where the line would have appeared in the old data set. For deletions, the N-LN# column shows where the line would have appeared in the new data set.

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 1
NEW:	USERID . TEST2 . SCRIPT(DATA)	OLD:	USERID . TEST1 . SCRIPT(DATA)
LISTING OUTPUT SECTION (WORD COMPARE)			
ID	SOURCE LINES		
I	- This line is reformatted: the spacing in the "new" member differs.	00010005	
	This line is the same in both members.	00020000	
I	- This line is different from the text in the "old" member.	00030000	
	This line is the same in both members.	00040000	
I	- This line is in the "new" member, but not in the "old".	00050000	
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 2
NEW:	USERID . TEST2 . SCRIPT	OLD:	USERID . TEST1 . SCRIPT
MEMBER SUMMARY LISTING (WORD COMPARE)			
CHNG MEMBERS - COMPARED	NEW-PROC	OLD-PROC	MATCHED
NEW-INS	OLD-DEL	N-DP-LN	O-DP-LN
N-LN-PRC	LN-INS	O-LN-PRC	LN-DEL
** DATA	55	40	37
	17	2	
1	TOTAL MEMBER(S) PROCESSED AS A PDS		
1	TOTAL MEMBER(S) PROCESSED HAD CHANGES		
0	TOTAL MEMBER(S) PROCESSED HAD NO CHANGES		
2	TOTAL NEW FILE MEMBER(S) NOT PAIRED		
2	TOTAL OLD FILE MEMBER(S) NOT PAIRED		

Figure 237. Word Comparison of Two PDSs Using Change Bar to Show Differences (Part 1 of 2)

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 3
	NEW: USERID . TEST2 . SCRIPT		OLD: USERID . TEST1 . SCRIPT
MEMBER SUMMARY LISTING (WORD COMPARE)			
NON-PAIRED NEW FILE MEMBERS		NON-PAIRED OLD FILE MEMBERS	
ABENew		ABEOld	
WORDsNew		WORDsOld	
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 4
	NEW: USERID . TEST2 . SCRIPT		OLD: USERID . TEST1 . SCRIPT
PDS WORD OVERALL TOTALS			
37	NUMBER OF WORD MATCHES	17	TOTAL CHANGES (PAIRED+NONPAIRED CHNG)
17	NEW FILE WORD INSERTIONS	3	NEW FILE LINES CHANGED/INSERTED
2	OLD FILE WORD DELETIONS	2	OLD FILE LINES CHANGED/DELETED
55	NEW FILE WORDS PROCESSED	5	NEW FILE LINES PROCESSED
40	OLD FILE WORDS PROCESSED	4	OLD FILE LINES PROCESSED
1	FALSE MATCH(S) CORRECTED		
LISTING - TYPE = LONG COMPARE - COLUMNS = 1: 80 LONGEST LINE = 50			
PROCESS OPTIONS USED : GWCBL			

Figure 237. Word Comparison of Two PDSs Using Change Bar to Show Differences (Part 2 of 2)

Member Summary Listing

The information shown in the Member Summary Listing depends on the compare type used. For example, PAGE 2 in Figure 237 on page 467 shows the number of words that were processed, matched, inserted, deleted, reformatted, and excluded from processing by a process option or statement, such as the DPLINE process option.

This part also shows how many members were processed, had changes, had no changes, and were not paired, with the last category provided for both new and old members.

As the sample listing shows, one member was processed and had changes. It also shows that both PDSs contain two *non-paired* members. The non-paired heading means that these members were not included in the comparison because they were not paired with members in the other PDS. The names of these members are shown in the second part of the Member Summary Listing, PAGE 3 of Figure 237 on page 467.

Summary and Statistics/PDS Overall Totals

Many SuperC listings contain an overall summary showing totals that are compiled for the compare type being used. For comparisons of sequential data sets or membered PDSs, this summary is called:

```
XXXX COMPARE SUMMARY AND STATISTICS
```

However, for comparisons of complete PDSs, as PAGE 4 of Figure 237 on page 467 shows, the summary is called:

```
PDS XXXX OVERALL TOTALS
```

In both headings, the XXXX is replaced by the compare type being used, such as WORD. As the sample listing shows, the left side of a LONG listing of a Word comparison shows how many words were matched, inserted, deleted, and processed. Several of these categories are related. For instance, the number of lines processed in the new data set should be equal to the number of line matches, the reformatted lines, and the new file line insertions. The number of processed lines does not include lines that were excluded from processing by a process option or statement, such as the DPLINE process option.

The left side of the sample listing also shows that the SuperC program corrected a *false match*, which it occasionally may detect on the first pass and reclassify as an insert/delete pair. The new classification is correct, but may have caused the process to overlook an alternate match. However, this condition should not occur frequently, which means your comparison results probably will not be affected. The SuperC program never incorrectly calls a data unit (file, line, word, or byte) a match when it should be a mismatch.

On the right side, the listing shows the total number of changes, the number of lines classified as changed/inserted and changed/deleted, and the number of lines processed. In a Line comparison listing, as shown in Figure 234 on page 463, these are called *paired* changes. Paired changes show, for example, that a line inserted in the new data set corresponds to a line deleted from the old data set. The opposite would be true for non-paired insertions or deletions.

The number given as total changes should be the sum of the paired changes, non-paired insertions, and non-paired deletions. For example, in Figure 234 on page 463, the right-side totals are the equivalent of the following:

```

2  PAIRED CHANGES
1  NON-PAIRED INSERTS
+ 0  NON-PAIRED DELETES
--
3  TOTAL CHANGES
```

Bottom-of-Listing Information

The following list describes information that may appear at the bottom of your SuperC listings. Figure 237 on page 467 shows an example.

- The LISTING-TYPE generated: OVSUM, DELTA, CHNG, or LONG
- The COMPARE-COLUMNS, or the range of columns compared, expressed as two numbers separated by a colon. For example, 1:76 means SuperC compared columns 1 to 76 in both data sets. If two column ranges are shown, the first is the range compared in the new data set or member and the second is the range compared in the old data set or member.
- The length in bytes of the LONGEST-LINE found in any data set or member compared
- A list of the PROCESS OPTIONS USED
- A list of the PROCESS STATEMENTS USED
- Warnings and error messages.

Note: For Byte comparisons, the COMPARE-COLUMNS information is not shown because column ranges are not applicable during Byte comparisons.

Y2K Comparison

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	12.31	PAGE 1
	NEW: NEW.DATA	OLD: OLD.DATA	
LISTING OUTPUT SECTION (LINE COMPARE)			
ID	SOURCE LINES	TYPE	LEN N-LN# O-LN#
-----1-----2-----3-----4-----5-----6-----7-----8			
I - 970522	-j-		
INFO	Date cols 11:15 packed 20970522 comp=(2097 05 22)	MAT=	1
D - 970522	-j-	RPL=	1 00002 00002
INFO	Date cols 11:14 packed 970522 comp=(1997 05 22)		
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	12.31	PAGE 2
	NEW: NEW.DATA	OLD: OLD.DATA	
LINE COMPARE SUMMARY AND STATISTICS			
1	NUMBER OF LINE MATCHES	1	TOTAL CHANGES (PAIRED+NONPAIRED CHNG)
0	REFORMATTED LINES	1	PAIRED CHANGES (REFM+PAIRED INS/DEL)
1	NEW FILE LINE INSERTIONS	0	NON-PAIRED INSERTS
1	OLD FILE LINE DELETIONS	0	NON-PAIRED DELETES
2	NEW FILE LINES PROCESSED		
2	OLD FILE LINES PROCESSED		
LISTING - TYPE = DELTA COMPARE - COLUMNS = 1: 72 LONGEST LINE = 80			
PROCESS OPTIONS USED : SEQ(DEFAULT)			
THE FOLLOWING PROCESS STATEMENTS (USING COLUMNS 1: 72) WERE PROCESSED:			
Y2PAST 1987			
NY2P 11:15 YYYYMMDD			
OY2P 11:14 YYYYMMDD			
NFOCUS COLS 1: 20			
OFOCUS COLS 1: 20			

Figure 238. Comparison Listing with Y2000 Dates Being Compared

Figure 238 shows how the two Year 2000 date definition process statements have each caused an information (INFO) line to be generated. The information line shows:

- the position of the defined date in the record
- the contents of the defined date field
- the date as it was *actually compared*. In the second information line, you can see the defined date has a 2-digit year portion ("97") but has actually been compared using a 4-digit year portion ("1997").

For more information, see "NY2C, NY2Z, NY2D, NY2P, OY2C, OY2Z, OY2D, OY2P —Year 2000 Date Definitions" on page 426.

Note: Occasionally, you might see some "unusual" characters on the inserted (I) and deleted (D) lines. These characters simply represent data that is in a non-character (and therefore not directly printable) format in the input record. You can ignore them.

Side-By-Side Listings

Two process options, NARROW and WIDE, let you produce listings that show source data side-by-side (Figure 239 on page 471) instead of interspersed (Figure 234 on page 463). The NARROW process option shows up to 55 columns from each member, while the WIDE process option shows up to 80. The listing is truncated if it exceeds the line length of the process option being used.

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 1
NEW:	USERID . TEST2 . SCRIPT(DATA)	OLD:	USERID . TEST1 . SCRIPT(DATA)
LISTING OUTPUT SECTION (LINE COMPARE)			
ID	NEW FILE LINES	ID	OLD FILE LINES
----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- +		----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- +	
RN	- This line is reformatted: the spacing in the "new" memb	RO	- This line is reformatted: the spacing in the "new"
I	- This line is the same in both members,	D	- This line is the same in both members,
I	- This line is different from the text in the "old" membe		- This line differs from the text in the "new" membe
I	- This line is the same in both members,		- This line is the same in both members.
I	- This line is in the "new" member, but not in the "old"		
		N-LN#	O-LN#
		00001	00001
		00002	00002
		00003	00003
		00004	00004
		00005	00004
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 2
NEW:	USERID . TEST2 . SCRIPT	OLD:	USERID . TEST1 . SCRIPT
MEMBER SUMMARY LISTING (LINE COMPARE)			
CHNG MEMBERS - COMPARED NEW-PROC OLD-PROC MATCHED NEW-INS OLD-DEL REFM-LN N-DP-LN O-DP-LN			
** DATA	5	4	2 2 1
1	TOTAL MEMBER(S) PROCESSED AS A PDS		
1	TOTAL MEMBER(S) PROCESSED HAD CHANGES		
0	TOTAL MEMBER(S) PROCESSED HAD NO CHANGES		
2	TOTAL NEW FILE MEMBER(S) NOT PAIRED		
2	TOTAL OLD FILE MEMBER(S) NOT PAIRED		

Figure 239. Side-By-Side LINE Comparison Using the NARROW Process Option (Part 1 of 2)

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 3
NEW:	USERID . TEST2 . SCRIPT	OLD:	USERID . TEST1 . SCRIPT
MEMBER SUMMARY LISTING (LINE COMPARE)			
NON-PAIRED NEW FILE MEMBERS		NON-PAIRED OLD FILE MEMBERS	
ABENew		ABEOld	
WORDsNew		WORDsOld	
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 4
NEW:	USERID . TEST2 . SCRIPT	OLD:	USERID . TEST1 . SCRIPT
PDS LINE OVERALL TOTALS			
2	NUMBER OF LINE MATCHES	3	TOTAL CHANGES (PAIRED+NONPAIRED CHNG)
1	REFORMATTED LINES	2	PAIRED CHANGES (REFM+PAIRED INS/DEL)
2	NEW FILE LINE INSERTIONS	1	NON-PAIRED INSERTS
1	OLD FILE LINE DELETIONS	0	NON-PAIRED DELETES
5	NEW FILE LINES PROCESSED		
4	OLD FILE LINES PROCESSED		
LISTING - TYPE = LONG COMPARE - COLUMNS = 1 : 80 LONGEST LINE = 80			
PROCESS OPTIONS USED : SEQ (DEFAULT) NARROW			
** SUPERC INFORM04 ** LISTING LINES MAY BE TRUNCATED DUE TO LIMITING OUTPUT LINE WIDTH.			

Figure 239. Side-By-Side LINE Comparison Using the NARROW Process Option (Part 2 of 2)

Effect of File Compare Type on SuperC Listings

Listing types are not applicable for the File compare type. The information included in a File compare listing depends on whether the data sets being compared are sequential/membered or partitioned, and on the process options and/or statements used, if any.

File Comparison of a Sequential Data Set or Membered PDS

This type of comparison is usually the fastest because it shows you only the most basic information about two data sets or members. As Figure 240 shows, this information includes the following for the new and old data sets or members:

- Whether the data sets or members are different (DIFF) or the same (SAME), shown by asterisks
- The number of bytes (N-BYTES, O-BYTES) and lines (N-LINES, O-LINES)
- The hash sum values (N-HASH-SUM, O-HASH-SUM). These values are 32-bit numeric representations of the contents of the new and old data sets, respectively. The values shown in these fields provide a general indication of whether two data sets on two different systems are different. If the values are different, the two data sets are different. If the values are the same, the two data sets may be identical, but not necessarily.

1 ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31 9.44 PAGE 1							
NEW: USERID . TEST2 . SCRIPT(DATA)				OLD: USERID . TEST1 . SCRIPT(DATA)			
DIFF	SAME	N-BYTES	O-BYTES	N-LINES	O-LINES	N-HASH-SUM	O-HASH-SUM
**		400	400	5	5	8972446D	577EEFEA

Figure 240. File Comparison of a Membered PDS

File Comparison of a Complete PDS

This type of comparison includes the Member Summary Listing section. As the **Function Keys** section of the *ISPF User Interface* chapter of the *ISPF User's Guide Volume I* shows, the first information is the same as for a sequential/membered data set comparison, except the totals and hash sums are separated according to member name. Additional totals show how many members were:

- Processed and, of those, how many had changes
- Paired
- Not paired.

The names of the paired and non-paired members are listed at the bottom.

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31					9.44	PAGE 1	
	NEW: USERID . TEST2 . SCRIPT						OLD: USERID . TEST1 . SCRIPT	
MEMBER SUMMARY LISTING (FILE COMPARE)								
DIFF	SAME	MEMBER-NAME	N-BYTES	O-BYTES	N-LINES	O-LINES	N-HASH-SUM	O-HASH-SUM
**		DATA	400	400	5	5	8972446D	577EEFEFA
		MEMBER TOTALS	400	400	5	5		
2	TOTAL MEMBER(S) PROCESSED AS A PDS							
1	TOTAL MEMBER(S) PROCESSED HAD CHANGES							
2	TOTAL MEMBER(S) PROCESSED HAD NO CHANGES							
1	TOTAL NEW FILE MEMBER(S) NOT PAIRED							
5	TOTAL OLD FILE MEMBER(S) NOT PAIRED							
4								
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31					9.44	PAGE 2	
	NEW: USERID . TEST2 . SCRIPT						OLD: USERID . TEST1 . SCRIPT	
MEMBER SUMMARY LISTING (FILE COMPARE)								
NON-PAIRED NEW FILE MEMBERS				NON-PAIRED OLD FILE MEMBERS				
ABENew				ABEOld				
WORDSNEW				WORDSOld				
PROCESS OPTIONS USED: APNDLST								

Figure 241. File Comparison of a Complete PDS

Search-For Listings

You can also produce listings by using the Search-For utility (option 3.14) and the Extended Search-For utility (option 3.13.S). A sample listing is shown in Figure 242.

1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 1
	LINE -# SOURCE SECTION		SRCH DSN: TEST2.SCRIP
DATA -----STRING(S) FOUND-----			
3	This line is the same in both members.		00030000
5	This line is the same in both members.		00050000
1	ISRSUPC - MVS/PDF FILE /LINE/WORD/BYTE/SFOR COMPARE UTILITY - ISPF FOR OS/390 1999/03/31	9.44	PAGE 2
	SUMMARY SECTION		SRCH DSN: USERID.TEST2.SCRIP
LINES-FOUND	MEMBERS-W/LNS	MEMBERS-PROC	LINES-PROC COMPARE-COLS LONGEST-LINE
2	1	3	60 1: 80 80
THE FOLLOWING PROCESS STATEMENT(S) WERE PROCESSED:			
SRCHFOR 'This line is'			
SRCHFOR 'both members'			

Figure 242. Search-For Listing

SuperC Listings

This listing was produced by searching all the members of a PDS named USERID.TEST.SCRIPT and by using the **ASIS** fields on the Extended Search-For Utility panel, as follows:

```
ASIS . . . . 'This line is'  
ASIS . . . . 'both members' c
```

PAGE 1 of the listing shows that both strings were found in lines 3 and 5 of member DATA. However, instead of just showing the strings that were being searched for, the listing shows each line in its entirety.

PAGE 2 shows the following information:

- Two lines were found.
- One member of the PDS had lines that contained the search string.
- Three members of the PDS were searched and 60 of the lines those members contained were processed.
- In each member, columns 1 to 80 were searched.
- The longest line in any member was 80 bytes.

No process options were specified on the Extended Search-For Utility panel. However, the bottom of PAGE 2 shows that the SuperC program automatically used the SRCHFOR process option because a search was requested. The SRCHFORC process option also was used because the C (continuation) keyword was specified at the end of the second **ASIS** field.

Update Data Set Control Output Examples

This section provides examples of the process options that are used to create update data sets. You cannot enter two different process options that begin with UPD. These options are compare options only, for use with the SuperCE utility (option 3.13).

Each description except APNUPD is accompanied by at least one sample update data set. All the samples were created by comparing member DATA, a PDS member common to both USERID.TEST1.SCRIPT and USERID.TEST2.SCRIPT. Figure 232 on page 462 shows the contents of this member in both PDSs.

Notes:

1. An update compare using the process options UPDCMS8 or UPDMVS8, that result in no differences found, creates an empty update output data set.
2. All “don’t process” options, and DPLINE or CMPLINE process statements are invalid when used with the process options UPDCMS8, UPDMVS8, UPDSEQ0, UPDLDEL, and UPDPDEL. The “don’t process” options are cancelled with an error notification.

APNDUPD—Append Update Data Set

This process option appends the incremental results of the current compare to an existing update report. It allows you to collect multiple update results under one data set name. However, the width of the update data set being appended must be the same as the width of the original listing. Therefore, update options (UPDxxxx) that would change the width cannot be used with APNDUPD unless the original listing was produced by the same options.

The APNDUPD process option is available with the Line, Word, and Byte compare types.

UPDCMS8—Update CMS Sequenced 8

This process option produces a data set that contains both control statements and new data set source lines using sequence numbers from old data set columns 73-80. It is available with the Line compare type only.

All UPDCMS8 control statements are identified by the characters “./” in columns 1 and 2 of the 80-byte record, followed by one or more blanks and additional blank-delimited fields. The control statements are sequence (S), insert (I), delete (D), replace (R), and comment (*).

Data sets created with the UPDCMS8 process option can be used as input to the CMS UPDATE command, as described in *VM/SP CMS Command Reference* and *VM/SP CMS Macros and Functions Reference*. Figure 243 shows an example of an UPDCMS8 update data set.

```

Menu  Utilities  Compilers  Help
-----
BROWSE      USERID.UPDATE.CMS8(LINE) - 01.00          Line 00000000 Col 001 080
***** Top of Data *****
./ * NEW:  USERID.TEST2.SCRIPT(DATA)
./ * OLD:  USERID.TEST1.SCRIPT(DATA)                  1999/02/24 17.34
./ R 00010000 00010000 $ 00012990 00002990
This line is in the new member, but not in the old.          00010000
This line is reformatted; the spacing in the new member differs. 00020000
./ R 00030000 00030000 $ 00034990 00004990
This line differs from the text in the old member.          00040000
./ D 00050000 00050000

***** Bottom of Data *****

Command ==>
F1=Help    F2=Split   F3=Exit    F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

```

Figure 243. UPDCMS8 Update Data Set

The record attributes for both input data sets must be F 80. They must also contain sequence numbers.

UPDCNTL—Update Control

This process option produces a control data set that relates matches, insertions, deletions, and reformats to:

- The relative line numbers of the old and new data sets (Line compare)
- The relative word position of the old data set (Word compare)
- The relative byte offset (Byte compare).

No source or data from either input data set is included. The following panels show the format used with each of these compare types.

UPDCNTL Data Set Using Line Compare

```

Menu  Utilities  Compilers  Help
-----
BROWSE  USERID.UPDATE.CNTL(LINE) - 01.00      Line 00000000 Col 001 080
***** Top of Data *****
*      NEW:  USERID.TEST2.SCRIPT(DATA)          1999/03/31 17.36
*      OLD:  USERID.TEST1.SCRIPT(DATA)
*
* N-LINE-# O-LINE-# MAT-LEN  INS-LEN  DEL-LEN REFM-LEN
00000001 00000001          00000001
00000002 00000001          00000001
00000003 00000002 00000001
00000004 00000003          00000001 00000001
00000005 00000004 00000001
00000006 00000005          00000001
*      END

***** Bottom of Data *****

Command ==>
F1=Help   F2=Split  F3=Exit   F5=Rfind  F7=Up     F8=Down   F9=Swap
F10=Left  F11=Right  F12=Cancel

```

Figure 244. UPDCNTL Data Set Using Line Compare

The top of Figure 244 shows the names of the new and old input data sets, along with the date and time the update data set was created. Table 30 shows the column numbers used to display the update information:

Table 30. UPDCNTL Format Using Line Compare

Column Numbers	Data Item
4-11	New line number
13-20	Old line number
22-29	Match length
31-38	Insert length
40-47	Delete length
49-56	Reformat length

UPDCNTL Data Set Using Word Compare

```

Menu  Utilities  Compilers  Help
-----
BROWSE  USERID.UPDATE.CNTL(WORD)  - 01.00  Line 00000000 Col 001 080
***** Top of Data *****
* NEW:  USERID.TEST2.SCRIPT (DATA)  1999/03/31 17.36
* OLD:  USERID.TEST1.SCRIPT (DATA)
* N-LINE-# N-LN-LEN N-COL WD-MAT-# N-WD-INS O-WD-DEL O-LINE-# O-LN-LEN O-COL
00000001 00000001 00001 00000010 00000013
00000002 00000001 00001 00000010 00000002 00000001 00000001 00000001 00001
00000002 00000001 00059 00000002 00000001 00000001 00000001 00000001 00064
00000003 00000001 00001 00000008 00000002 00000001 00000001 00000001 00001
00000003 00000001 00040 00000001 00000001 00000002 00000001 00000001 00040
00000004 00000001 00001 00000008 00000003 00000001 00000001 00000001 00001
00000004 00000001 00040 00000001 00000001 00000001 00000001 00000001 00040
00000004 00000001 00046 00000001 00000003 00000001 00000001 00000001 00046
00000004 00000001 00054 00000001 00000001 00000003 00000001 00000001 00054
00000005 00000001 00001 00000008 00000004 00000001 00000001 00000001 00001
00000005 00000001 00040 00000001 00000013 00000004 00000002 00000001 00040
00000005 00000001 00040 00000001 00000005 00000001 00000001 00000001 00057
* END
***** Bottom of Data *****
Command ==>
F1=Help  F2=Split  F3=Exit  F5=Rfind  F7=Up  F8=Down  F9=Swap
F10=Left F11=Right F12=Cancel

```

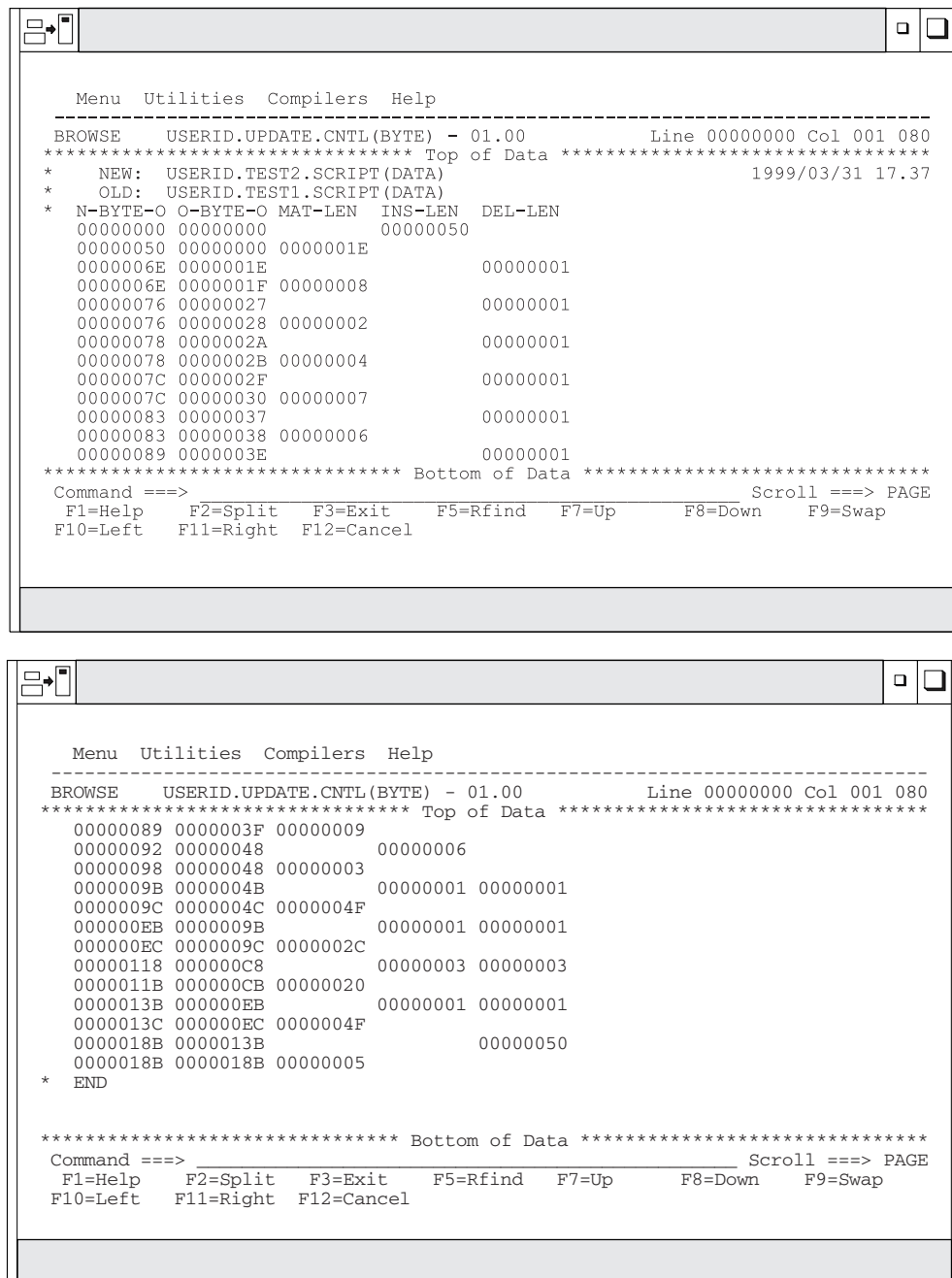
Figure 245. UPDCNTL Listing Using Word Compare

The top of Figure 245 shows the names of the new and old input data sets, along with the date and time the update data set was created. Table 31 shows the column numbers used to display the update information:

Table 31. UPDCNTL Format Using Word Compare

Column Numbers	Data Item
4-11	Beginning new line number
13-20	Number of lines
22-26	New column number (beginning of word)
28-35	Number of matching words
37-44	Number of new inserted words
46-53	Number of old deleted words
55-62	Beginning old line number
64-71	Number of old lines
73-77	Old column number

UPDCNTL Data Set Using Byte Compare



The figure consists of two screenshots of the UPDCNTL program interface, showing data comparison results. Both screenshots have a menu bar with 'Menu', 'Utilities', 'Compilers', and 'Help'. The main display area shows the results of a byte comparison between two data sets.

Top Screenshot:

```

Menu  Utilities  Compilers  Help
-----
BROWSE  USERID.UPDATE.CNTL(BYTE) - 01.00          Line 00000000 Col 001 080
***** Top of Data *****
* NEW:  USERID.TEST2.SCRIPT(DATA)                  1999/03/31 17.37
* OLD:  USERID.TEST1.SCRIPT(DATA)
* N-BYTE-O  O-BYTE-O  MAT-LEN  INS-LEN  DEL-LEN
00000000 00000000 00000000 00000050
00000050 00000000 0000001E
0000006E 0000001E 00000001
0000006E 0000001F 00000008 00000001
00000076 00000027 00000001
00000076 00000028 00000002
00000078 0000002A 00000001
00000078 0000002B 00000004
0000007C 0000002F 00000001
0000007C 00000030 00000007
00000083 00000037 00000001
00000083 00000038 00000006
00000089 0000003E 00000001
***** Bottom of Data *****
Command ==>
F1=Help  F2=Split  F3=Exit  F5=Rfind  F7=Up  F8=Down  F9=Swap
F10=Left F11=Right F12=Cancel

```

Bottom Screenshot:

```

Menu  Utilities  Compilers  Help
-----
BROWSE  USERID.UPDATE.CNTL(BYTE) - 01.00          Line 00000000 Col 001 080
***** Top of Data *****
00000089 0000003F 00000009
00000092 00000048 00000006
00000098 00000048 00000003
0000009B 0000004B 00000001 00000001
0000009C 0000004C 0000004F
000000EB 0000009B 00000001 00000001
000000EC 0000009C 0000002C
00000118 000000C8 00000003 00000003
0000011B 000000CB 00000020
0000013B 000000EB 00000001 00000001
0000013C 000000EC 0000004F
0000018B 0000013B 00000005
0000018B 0000018B 00000005
* END

***** Bottom of Data *****
Command ==>
F1=Help  F2=Split  F3=Exit  F5=Rfind  F7=Up  F8=Down  F9=Swap
F10=Left F11=Right F12=Cancel

```

Figure 246. UPDCNTL Listing Using Byte Compare

The top of the first panel in Figure 246 shows the names of the new and old input data sets, along with the date and time the update data set was created. The second panel shows the result of scrolling down to see the remainder of the data set.

Table 32 on page 479 shows the column numbers used to display the update information:

Table 32. UPDCNTL Format Using Byte Compare

Column Numbers	Data Item
4–11	New byte offset
13–20	Old byte offset
22–29	Number of matching bytes
31–38	Number of inserted bytes
40–47	Number of deleted bytes

UPDMVS8—Update MVS Sequenced 8

This process option produces a data set that contains both control statements and new data set source lines using sequence numbers from old data set columns 73-80. This process option is available for the Line compare type only.

The format of the generated data may be suitable as input to the IEBUPDTE utility. Refer to *OS/VS2 MVS Utilities* for information about the contents of this data set. Figure 247 shows an example of an UPDMVS8 update data set.

```

Menu  Utilities  Compilers  Help
-----
BROWSE  USERID.UPDATE.MVS8(LINE) - 01.00          Line 00000000 Col 001 080
***** Top of Data *****
./  CHANGE LIST=ALL,NAME=DATA      OLD:USERID.TEST1.SCRIPT
This line is in the new member, but not in the old.                00010000
This line is reformatted; the spacing in the new member differs.    00015000
This line differs from the text in the old member.                  00030000
./  DELETE  SEQ1=00050000,SEQ2=00050000

***** Bottom of Data *****
Command ==> _____ Scroll ==> PAGE
F1=Help   F2=Split  F3=Exit   F5=Rfind  F7=Up    F8=Down  F9=Swap
F10=Left  F11=Right  F12=Cancel


```

Figure 247. UPDMVS8 Update Data Set Listing

The data sets to be compared must have a record format of F 80. They must also contain sequence numbers.

UPDLDEL—Update Long Source and Delta Data Set

This process option produces a data set that contains both control statements, matching new data set source lines, inserted new data set source lines, and deleted old data set source lines. This process option is available for the Line compare type only.

The format of the generated data may be suitable for direct editing. Figure 248 on page 480 shows an example of an UPDLDEL update data set.

```

Menu  Utilities  Compilers  Help
-----
BROWSE      USERID.UPDATE.CNTL(LINE) - 01.00      Line 00000000 Col 001 080
***** Top of Data *****
*HDR1 NEW3.TEST.LIB      NEWMEM
*HDR2 LUDLOW.MACLIB.LIB  OLDMEM      TYPE = UPDLDEL
*D-   DEL#= 2      N-REF#=000000 O-REF#=000001 *****SUPERC CHANGE HEADER*****
      This is line 1 in the old data set. It is not in the new data set.
      This is line 2 in the old data set. It is not in the new data set.
*M-   MAT#= 2      N-REF#=000001 O-REF#=000003 *****SUPERC CHANGE HEADER*****
      This is a line in both data sets.
      This is a line in both data sets.
*I-RP INS#= 1      N-REF#=000003 O-REF#=000005 *****SUPERC CHANGE HEADER*****
      This is a line only in the new data set.
*D-RP DEL#= 1      N-REF#=000003 O-REF#=000005 *****SUPERC CHANGE HEADER*****
      This is a line in both data sets.
*M-   MAT#= 1      N-REF#=000004 O-REF#=000006 *****SUPERC CHANGE HEADER*****
      This is a line in both data sets.
*I-RF INS#= 1      N-REF#=000005 O-REF#=000007 *****SUPERC CHANGE HEADER*****
      This is a line in both data sets but reformatted.
***** Bottom of Data *****
Command ==> _____ Scroll ==> PAGE
F1=Help  F2=Split  F3=Exit  F5=Rfind  F7=Up    F8=Down  F9=Swap
F10=Left F11=Right F12=Cancel

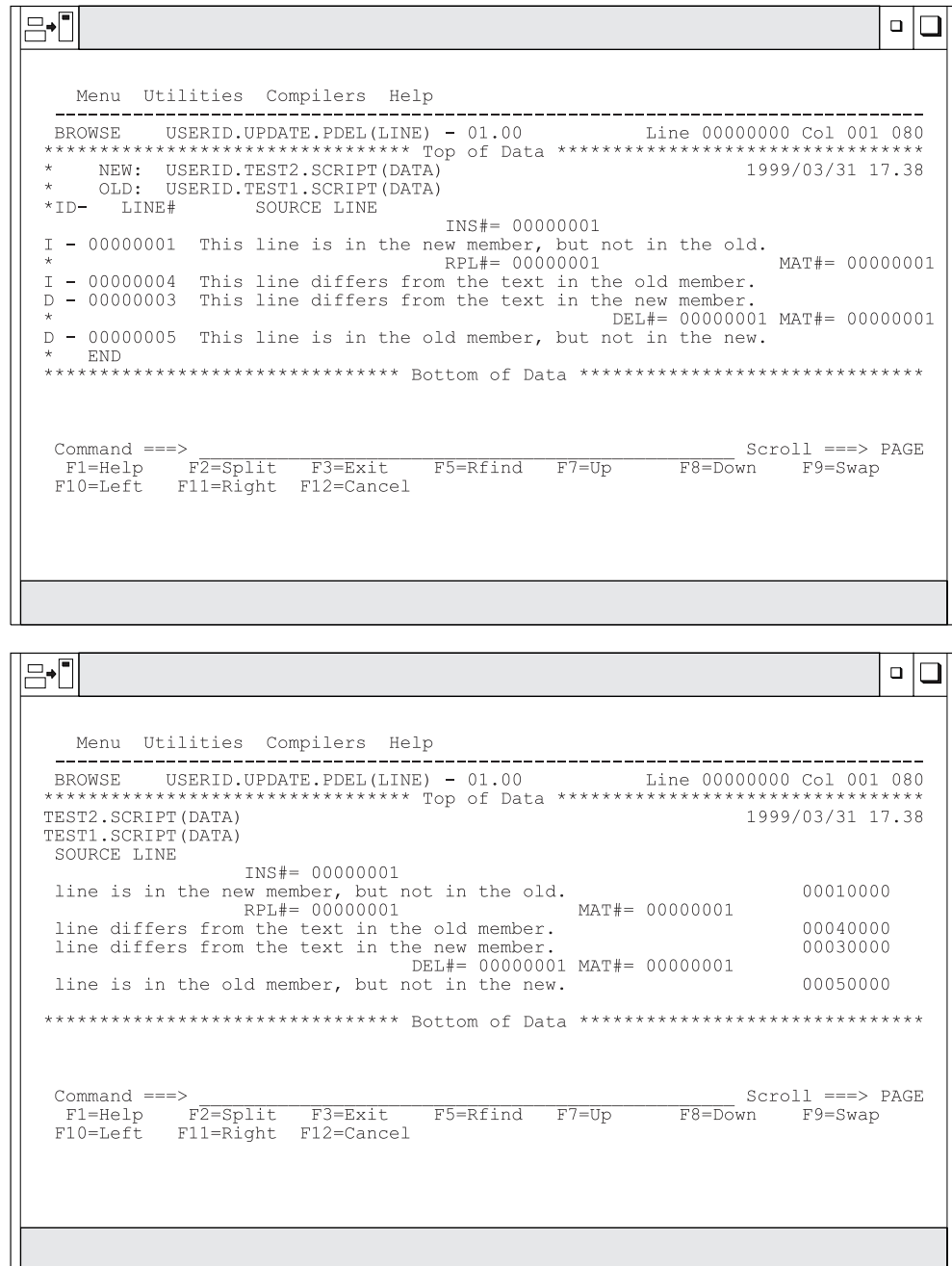
```

Figure 248. UPDLDEL Update Control Data Set

UPDPDEL—Prefixed Delta Lines

This process option produces a data set that contains header records and complete delta lines from the input source data sets, up to a maximum of 32K columns in each output line. It is available for the Line compare type only.

The data set produced is a variable length data set that reflects the input source data set's characteristics. Prefix codes, such as I for insert, and the line number precede lines from the source data sets. Abbreviations show the total number of consecutive lines flagged as changed, such as INS#= for the number of consecutive inserted lines. The number of replaced lines (RPL#) always refers to consecutive pairs of inserted and deleted lines. Figure 249 on page 481 shows an example of an UPDPDEL update data set. The first panel shows only the first 80 columns; the second panel shows the result of scrolling right to see the remainder of the member.



```

Menu  Utilities  Compilers  Help
-----
BROWSE      USERID.UPDATE.PDEL(LINE) - 01.00      Line 00000000 Col 001 080
***** Top of Data *****
* NEW: USERID.TEST2.SCRIPT(DATA)                  1999/03/31 17.38
* OLD: USERID.TEST1.SCRIPT(DATA)
* ID- LINE# SOURCE LINE
      INS#= 00000001
I - 00000001 This line is in the new member, but not in the old.
* RPL#= 00000001 MAT#= 00000001
I - 00000004 This line differs from the text in the old member.
D - 00000003 This line differs from the text in the new member.
* DEL#= 00000001 MAT#= 00000001
D - 00000005 This line is in the old member, but not in the new.
* END
***** Bottom of Data *****

Command ==> Scroll ==> PAGE
F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel

```

Figure 249. UPDPDEL Update Data Set Listing

UPDREV—Update Revision

This process option produces an update file containing a copy of the *new* source text with revision tags delimiting the changed text lines.

The UPDREV process option is available for LINE and WORD compare types.

SuperC Listings

UPDREV supports two different types of revision tags, one for SCRIPT/VS data sets and one for BookMaster data sets. (Use the REVREF process statement to specify which type of revision tag you want—see “REVREF—Revision Code Reference” on page 429).

Figure 250 shows a SuperC UPDREV data set with SCRIPT/VS revision tags (.rc on/off).

```
.rc 1 |
.rc 1 on
This line is reformatted; the spacing in the "new" file differs.
.rc 1 off
This line is the same in both files.
.rc 1 on
This line differs from the text in the "old" file.
.rc 1 off
This line is the same in both files.
.rc 1 on
This line is in the "new" file, but not in the "old".
.rc 1 off
```

Figure 250. Example of a UPDREV Update File for SCRIPT/VS Documents

When the UPDREV update file in Figure 250 is subsequently processed by SCRIPT/VS, the final scripted output will have “|” revision characters in the left margin of the output document identifying the changed lines (those between the SCRIPT/VS revision tags .rc 1 on and .rc 1 off).

Note: The revision character (“|” in the example in Figure 250) can be specified either by using a REVREF process statement (see “REVREF—Revision Code Reference” on page 429) or by having a SCRIPT/VS .rc. revision tag as the first record in the *new* data set. Subsequent changes to the source can therefore be separately identified by using different revision characters.

Figure 251 shows a SuperC UPDREV data set with BookMaster revision tags (:rev/:erev).

```
:rev refid=ABC.
This line is reformatted; the spacing in the "new" file differs.
:erev.
:rev refid=ABC.
This line is the same in both files.
:erev.
:rev refid=ABC.
This line differs from the text in the "old" file.
:erev.
:rev refid=ABC.
This line is the same in both files.
:erev.
:rev refid=ABC.
This line is in the "new" file, but not in the "old".
:erev.
```

Figure 251. Example of a UPDREV Update Data Set for BookMaster Documents

When the UPDREV update data set in Figure 251 is subsequently processed by BookMaster, the final formatted output will have the revision character associated with the revision ID abc (as specified by a :revision. &bookie tag in the *new*

input data set) in the left margin of the output document identifying the changed lines (those between the BookMaster revision tags :rev and :erev).

Note: The revision ID (abc in the example in Figure 251 on page 482) is controlled by the REVREF process statement—see “REVREF—Revision Code Reference” on page 429. Subsequent changes to the source can therefore be separately identified by using different revision IDs (which are associated with unique revision characters).

UPDREV2 - Update Revision (2)

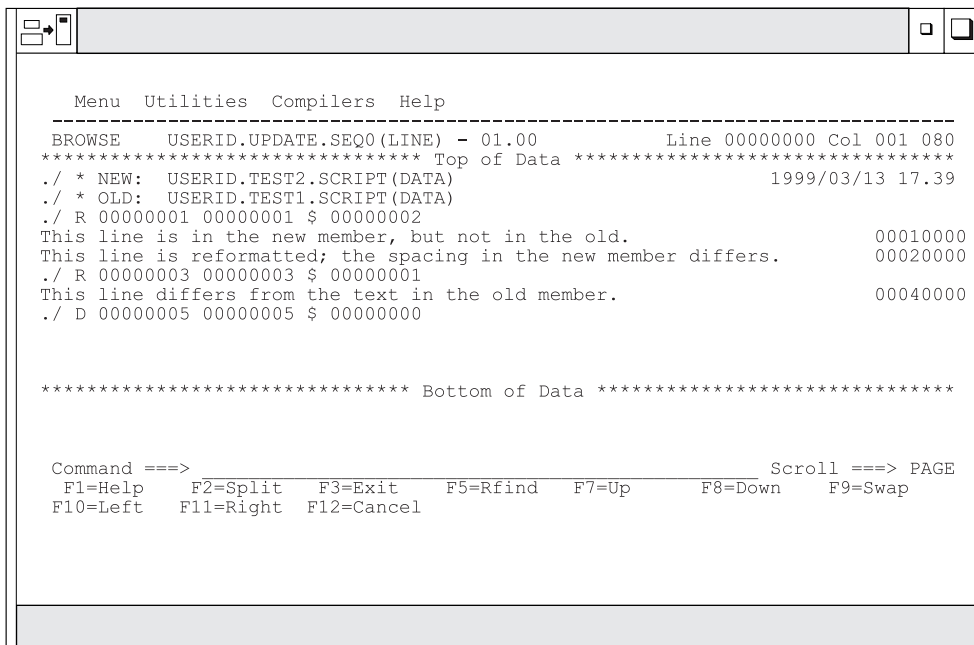
UPDREV2 is identical to UPDREV with the exception that data between the following BookMaster tags are not deleted in the update data set:

```
:cgraphic.
:ecgraphic.
:fig.
:efig.
:lblbox.
:elblbox.
:nt.
:ent.
:screen.
:escreen.
:xmp.
:exmp.
```

UPDSEQ0—Update Sequenced 0

This process option produces a control data set that relates insertions and deletions to the relative line numbers of the old data set. It is available for the Line compare type only. UPDSEQ0 is similar to UPDCMS8, but uses relative line numbers instead of sequence number columns from the old data set.

This update data set is characterized by control statements followed by source lines from the new data set. All UPDSEQ0 control statements are identified by the characters ./ in columns 1 and 2 of the 80-byte record, followed by one or more blanks and additional blank-delimited fields. The control statements are insert (I), delete (D), replace (R), and comment (*). Control statement data does not extend beyond column 50. Figure 252 shows an example of a UPDSEQ0 update data set listing.



```

Menu  Utilities  Compilers  Help
-----
BROWSE      USERID.UPDATE.SEQ0(LINE) - 01.00      Line 00000000 Col 001 080
***** Top of Data *****
./ * NEW:  USERID.TEST2.SCRIPT(DATA)              1999/03/13 17.39
./ * OLD:  USERID.TEST1.SCRIPT(DATA)
./ R 00000001 00000001 $ 00000002
This line is in the new member, but not in the old.      00010000
This line is reformatted; the spacing in the new member differs. 00020000
./ R 00000003 00000003 $ 00000001
This line differs from the text in the old member.      00040000
./ D 00000005 00000005 $ 00000000

***** Bottom of Data *****

Command ==>
F1=Help      F2=Split    F3=Exit      F5=Rfind    F7=Up       F8=Down     F9=Swap
F10=Left     F11=Right   F12=Cancel

```

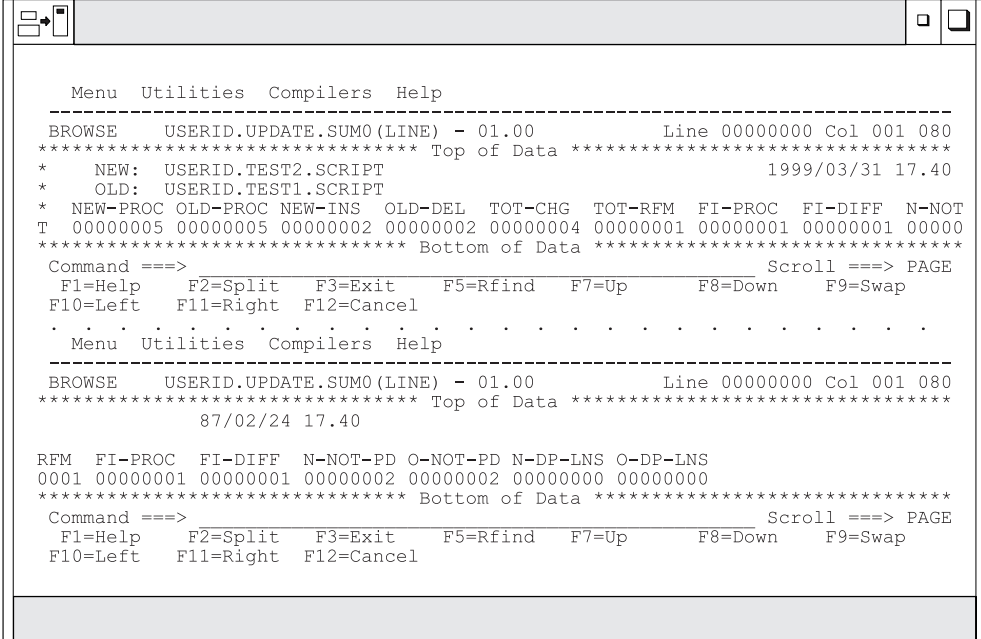
Figure 252. UPDSEQ0 Update Data Set

UPDSUMO—Update Summary Only

This process option produces an update data set of four lines: new data set name, old data set name, column headers, and a summary totals line. It is available for the Line, Word, and Byte compare types.

The summary totals line has a T in column 1. The summary statistics are located at fixed offsets in the output line. The data set has a line length of 132 bytes.

UPDSUMO Data Set Using Line Compare



```

Menu Utilities Compilers Help
-----
BROWSE  USERID.UPDATE.SUM0(LINE) - 01.00          Line 00000000 Col 001 080
***** Top of Data *****
* NEW:  USERID.TEST2.SCRIPT                      1999/03/31 17.40
* OLD:  USERID.TEST1.SCRIPT
* NEW-PROC OLD-PROC NEW-INS OLD-DEL TOT-CHG TOT-RFM FI-PROC FI-DIFF N-NOT
T 00000005 00000005 00000002 00000002 00000004 00000001 00000001 00000001 00000
***** Bottom of Data *****
Command ==> Scroll ==> PAGE
F1=Help  F2=Split  F3=Exit  F5=Rfind  F7=Up  F8=Down  F9=Swap
F10=Left F11=Right F12=Cancel
. . . . .
Menu Utilities Compilers Help
-----
BROWSE  USERID.UPDATE.SUM0(LINE) - 01.00          Line 00000000 Col 001 080
***** Top of Data *****
87/02/24 17.40

RFM FI-PROC FI-DIFF N-NOT-PD O-NOT-PD N-DP-LNS O-DP-LNS
0001 00000001 00000001 00000002 00000000 00000000 00000000
***** Bottom of Data *****
Command ==> Scroll ==> PAGE
F1=Help  F2=Split  F3=Exit  F5=Rfind  F7=Up  F8=Down  F9=Swap
F10=Left F11=Right F12=Cancel

```

Figure 253. UPDSUMO Data Set Using Line Compare

In Figure 253, the member is shown in split screen mode. The bottom half of the screen shows the result of scrolling right to see the remainder of the member. Table 33 shows the column numbers used to display the update information:

Table 33. UPDSUMO Format Using Line Compare

Column Numbers	Data Item
4-11	Number of new lines processed
13-20	Number of old lines processed
22-29	Number of new line insertions
31-38	Number of old line deletions
40-47	Total number of line changes
49-56	Total number of reformats
58-65	Total number of members processed
67-74	Total number of members different
76-83	Total new members not processed
85-92	Total old members not processed
94-101	Total number of new lines that are not to be processed
103-110	Total number of old lines that are not to be processed

UPDSUMO Data Set Using Word Compare

```

Menu Utilities Compilers Help
-----
BROWSE      USERID.UPDATE.SUM0 (WORD)  - 01.00      Line 00000000 Col 001 080
***** Top of Data *****
* NEW: USERID.TEST2.SCRIPT                      1999/03/31 17.40
* OLD: USERID.TEST1.SCRIPT
* NEW-PROC OLD-PROC NEW-INS OLD-DEL TOT-CHG      FI-PROC FI-DIFF N-NOT
T 00000054 00000053 00000017 00000016 00000030    00000001 00000001 00000
***** Bottom of Data *****
Command ==> Scroll ==> PAGE
F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel
. . . . .
Menu Utilities Compilers Help
-----
BROWSE      USERID.UPDATE.SUM0 (WORD)  - 01.00      Line 00000000 Col 001 080
***** Top of Data *****
87/02/24 17.40

FI-PROC FI-DIFF N-NOT-PD O-NOT-PD
00000001 00000001 00000002 00000002
***** Bottom of Data *****
Command ==> Scroll ==> PAGE
F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel

```

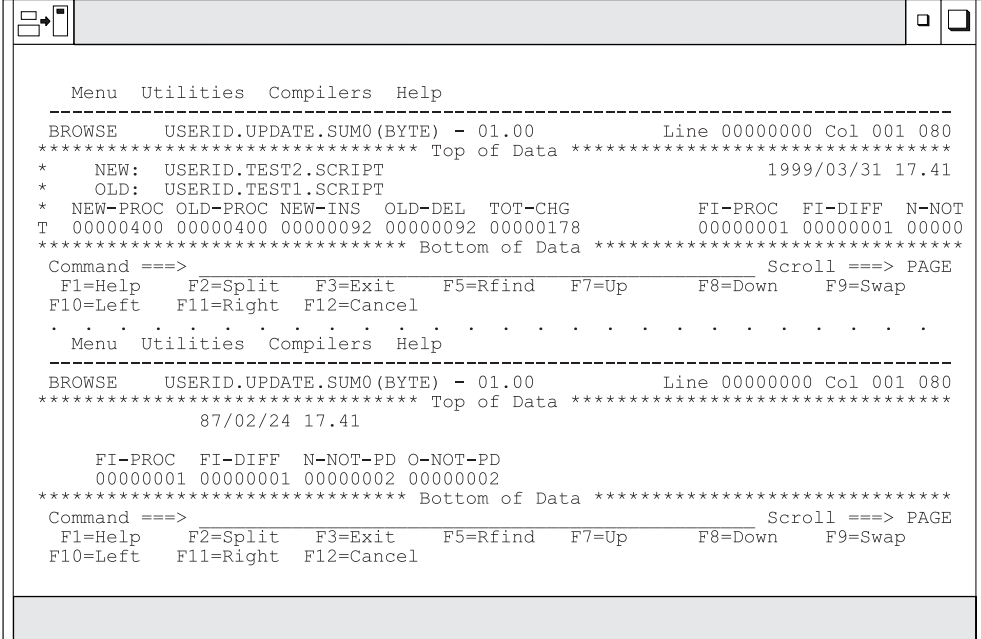
Figure 254. UPDSUMO Data Set Using Word Compare

In Figure 254, the member is shown in split screen mode. The bottom half of the screen shows the result of scrolling right to see the remainder of the member. Table 34 shows the column numbers used to display the update information:

Table 34. UPDSUMO Format Using Word Compare

Column Numbers	Data Item
4-11	Number of new words processed
13-20	Number of old words processed
22-29	Number of new word insertions
31-38	Number of old word deletions
40-47	Total number of word changes
49-56	Blank space. No reformat columns are represented in Word compare.
58-65	Total number of members processed
67-74	Total number of members different
76-83	Total new members not processed
85-92	Total old members not processed

UPDSUMO Data Set Using Byte Compare



```

Menu Utilities Compilers Help
-----
BROWSE   USERID.UPDATE.SUM0 (BYTE)  - 01.00           Line 00000000 Col 001 080
***** Top of Data *****
* NEW:   USERID.TEST2.SCRIPT           1999/03/31 17.41
* OLD:   USERID.TEST1.SCRIPT
* NEW-PROC OLD-PROC NEW-INS OLD-DEL TOT-CHG          FI-PROC FI-DIFF N-NOT
T 00000400 00000400 00000092 00000092 00000178      00000001 00000001 00000
***** Bottom of Data *****
Command ==>
F1=Help   F2=Split   F3=Exit   F5=Rfind   F7=Up     F8=Down   F9=Swap
F10=Left  F11=Right  F12=Cancel
. . . . .
Menu Utilities Compilers Help
-----
BROWSE   USERID.UPDATE.SUM0 (BYTE)  - 01.00           Line 00000000 Col 001 080
***** Top of Data *****
87/02/24 17.41

FI-PROC FI-DIFF N-NOT-PD O-NOT-PD
00000001 00000001 00000002 00000002
***** Bottom of Data *****
Command ==>
F1=Help   F2=Split   F3=Exit   F5=Rfind   F7=Up     F8=Down   F9=Swap
F10=Left  F11=Right  F12=Cancel

```

Figure 255. UPDSUMO Data Set Using Byte Compare

In Figure 255, the member is shown in split screen mode. The bottom half of the screen shows the result of scrolling right to see the remainder of the member. Table 35 shows the column numbers used to display the update information:

Table 35. UPDSUMO Format Using Byte Compare

Column Numbers	Data Item
4-11	Number of new bytes processed
13-20	Number of old bytes processed
22-29	Number of new byte insertions
31-38	Number of old byte deletions
40-47	Total number of byte changes
49-56	Blank space. No reformat columns are represented in Byte compare.
58-65	Total number of members processed
67-74	Total number of members different
76-83	Total new members not processed
85-92	Total old members not processed

SuperC Listings

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Index

Special Characters

: (colon), using with function key definition 24
/ (data set name character), Data Set List utility (option 3.4) 136
% field, Data Set List utility 135
= (repeat last command) line command, Data Set List utility (option 3.4) 147
* Search-For process statement 433, 452
* Search-For process statement 433, 452
%Used field, VTOC Summary Information panel 140
%USED keyword, SORT command 154
= workstation command 375
> (greater than)
 using with function key definition 24
.IM control word 234
"To" panel for copying 118
"To" panel for moving 120
!, defined for SuperC 466
&xxxxx action, ACTION column 185

Numerics

3850 virtual volumes
 allocating a data set to 98
5550 terminal 186

A

A (ANSI) parameter, Printer Carriage Control field 181
A (ASA printer characters) record format 99
ACCOUNT, TSO 78
ACCOUNT command, TSO 98
ACTBAR workstation command 375
Action column 184
Activate/Create Profile DS Name field, SuperCE Profile Manager panel 213
active window frame color 40
AD/Cycle C/370 compiler
 batch processing 285
 foreground processing 265
Ada/Cycle C/370 compiler
 batch processing (option 5.15) 285
 foreground processing (option 4.15) 264
Additional IBM Program Development Products panel 345
Additional Input Libraries field, Foreground Print Options panel 237
address, APPC 49
address, TCP/IP 49
AFTER parameter
 Breakpoint Primary Option Menu 343
 When field 339
Alias action, Action column 185
Alias members, searching 457

Alias members, SuperC compare 457
ALL parameter
 FIND command 67
 Function field 335
 Variable field 336
ALLMEMS 394, 433
allocate action prompt workstation command 375
ALLOCATE command, TSO 96
allocate SMS workstation command 375
allocate workstation command 375
Allocation Error panel 101
American National Standard Institute 181
ANYC Search-For process option 433
ANYC SuperCE process option 394
APNDLST Search-For process option 434
APNDLST SuperCE process option 394
APNDUPD SuperCE process option 395
APPC address
 definition 49
APPEND command
 Data Set List utility (option 3.4) 148
 parameters 148
Application ID field, Command Table Utility panel 183
aspect ratio parameter for PRINTG 11
Assembler concatenation sequence 238
Assembler H (option 4.1) allocation data sets
 overview 240
Assembler H (option 5.1) 276
Assembler Options field
 Foreground Assembler H (option 4.1) 241
Attrib display view, Initial View field 127

B

B (batch) parameter, Mode field
 Search-For Utility panel 217
 SuperC Utility panel 194
B (blocked) record format, Record Format field 99
B (browse) line command
 Data Set List utility (option 3.4) 143
Batch (option 5)
 AD/Cycle C/370 compiler (option 5.16) 285
 Ada/Cycle C/370 compiler (option 5.15) 285
 Assembler H (option 5.1) 276
 C/370 compiler (option 5.13) 283
 JCL generation for Assembler and Linkage Editor 276
 JCL generation for compilers 274
 Linkage Editor (option 5.7) 280
 Member Parts List (option 5.12) 283
 password protection, lack of 273

Batch (option 5) (*continued*)
 PL/I optimizing compiler (option 5.5) 279
 processing sequence 272
 VS COBOL II compiler (option 5.2) 277
 VS COBOL II interactive debug (option 5.10) 282
 VS FORTRAN compiler (option 5.3) 278
 VS Pascal compiler (option 5.6) 279
Batch AD/370 Compiler Information Panel 286
Batch ADA/370 Compiler Information Panel 285
Batch Assembler H panel 276
Batch C/370 Compiler Information Panel 284
Batch Linkage Edit panel 281
Batch Member Parts List panel 283
Batch options
 C/C++ for MVS/ESA 288
 ISPD TLC 286
BATCH parameter, Print Mode field 160
Batch PL/I Optimizing Compile panel 279
Batch REXX/370 Compiler Information Panel 284
Batch Selection panel 271
Batch Selection panel with JCL generated 274
Batch VS COBOL II Compile panel 277
Batch VS FORTRAN Compile panel 278
Batch VS Pascal Compile panel 280
BEFORE parameter
 Breakpoint Primary Option Menu 343
 When field 339
blank, SuperC prefix code 466
Blank action, Action column 185
blank parameter
 Active field
 breakpoints 339
 function traces 335
 variable traces 337
 DSORG field 135
 Operation field 337
 Pool field 337
 Printer Carriage Control field 181
 Select Pack option for "To" data set field 118
 Sequence Numbers field 197
 Specify additional search strings field 217
 When field 339
BLKS parameter, Space Units field 98
BLKSZ
 field 135
 keyword 154
 SORT command 154

- Block size field, Allocate New Data Set panel 99
- bottom-of-listing information, SuperC 469
- breakpoints
 - defined 337
 - with qualification parameter values 340
- Breakpoints (option 7.8)
 - Cancel (option C) 342
 - CANCEL primary command 339
 - control display 341
 - D (delete) line command 339
 - END primary command 339, 341
 - finding a breakpoint 342
 - Go (option G) 342
 - I (insert) line command 339
 - input errors 341
 - LOCATE primary command 339
 - primary command 339
 - QUAL primary command 339
 - qualification 341
 - qualification parameter values 339
 - R (repeat) line command 339
 - specifying breakpoints 338
 - syntax checking 341
- Breakpoints panel 338
- BROWSE command
 - BROWSE 63
 - COLUMNS 64
 - DISPLAY 64
 - displaying after processing 63
 - FIND 66
 - HEX 70
 - LOCATE 71
 - overview 63
 - parameter member 63
 - RESET 72
 - SUBMIT 63, 72
- Browse Command - Entry Panel 63
- Browse data display panel 62
- Browse field, SCRIPT/VIS Processor panel 249
- Browse hexadecimal display
 - data 71
 - vertical 71
- Browse Mode
 - Browse data display 62
 - current position in data set 71
 - ending Browse 62
 - overview 63
 - selecting Browse 62
 - valid logical record length 59
 - valid record format 59
- BROWSE Output field, SuperCE Utility panel 207
- browse output mode 194, 207, 217, 227
- Browse workstation command 375
- bypassing the WSA connection panel 176
- Byte parameter, Compare Type field 205

C

- C (catalog data set) line command, Data Set List Utility (option 3.4) 145

- C (continuation) keyword, Search-For utility (option 3.14) 219
- C/370 compiler
 - batch processing (option 5.13) 283
 - foreground processing (option 4.13) 263
- C/C++ compile 289
- C/C++ compiler panel 269
- C/C++ for MVS/ESA (Option 4.19) 268
- C/C++ for MVS/ESA compile, batch 288
- CALL statement format 259
- CANCEL, Traces (option 7.7) 337
- CANCEL command
 - Breakpoints (option 7.8) 339
 - Command Table utility (option 3.9) 185
 - Dialog Test (option 7) 303
 - Tables (option 7.4) 322, 324
 - Traces (option 7.7) 336
 - Variables (option 7.3) 313
- catalog workstation command 375
- CC parameter, DISPLAY command 65
- change bar, defined for SuperC 466
- char parameter, DISPLAY command 65
- character, DBCS 79
- character string 68
- character string, LOCATE 303
- CHARS parameter, FIND command 66
- CHG operation 337
- CHNG parameter, Listing Type field 196, 205
- CHNG SuperC process statement 407
- CHNGV SuperC process statement 407
- CKPACKL Search-For process option 434
- CKPACKL SuperCE process option 395
- Class field, Outlist Utility panel 180
- Client/Server component download option 164
- Client/Server download 168
- CLIST
 - error exits 294
- CLIST TERMIN command procedure statements 294
- closing a data set 62
- CMD field 306
- CMPBOFS process statement operands 408
- CMPCOLM Search-For process statement 438
- CMPCOLM SuperC process statement 409
- CMPCOLMN SuperC process statement 409
- CMPCOLMO SuperC process statement 409
- CMPLINE Search-For process statement 439
- CMPLINE SuperC process statement 410
- CMPSECT SuperC process statement 412
- CNPML SuperCE process option 395
- COBOL Interactive debug (option 4.10A) overview 255
- print output data sets 257

- COBOL Interactive debug (option 4.10A) (*continued*)
 - processing sequence 256
 - symbolic debug data sets 257
- COBOL Interactive Debug panel 256
- COBOL parameter, Sequence Numbers field 197
- COBOL Search-for process option 434
- COBOL/SF-F (option 9.4), Structuring Facility foreground dialog 346
- COBOL Structuring Facility panel 346
- COBOL SuperCE process option 395
- col-1 and col-2 parameters, FIND command 66
- COLOR
 - change defaults 36
- column-identification line
 - defined 64
 - removing with RESET command 72
- column limitations 69
- COLUMNS command, Browse 64
- Command (option 6)
 - interrupting a TSO command, CLIST, or REXX EXEC 295
 - restrictions for entering a CLIST or REXX EXEC 294
 - Session Manager, using 294
 - terminal settings 295
 - TSO commands, CLISTs, and REXX EXECs, entering 293
- command action prompt workstation command 375
- Command field, display view panels 133
- command line placement, specifying 7
- command prefix (&), displaying commands after processing 63
- command stacking
 - specifying delimiter 13
- Command Table Editing panel 184
- command table line commands
 - edit 186
 - view 186
- Command Table utility (option 3.9) line commands
 - D (delete) 186
 - I (insert) 186
 - R (repeat) 186
- primary commands
 - CANCEL 185
 - END 185
- Command Table Utility panel 183 commands
 - Dialog Test 301
 - displaying after processing 63
 - entering long commands 291
 - ISPF command shell 371
 - TSO command 369
 - Workplace 375
 - WS command 370
- Compare Type field, SuperCE Utility panel 204
- Compare types, SuperC
 - Byte 205
 - File 204
 - Line 204
 - Word 204

compress request exit 85, 146
 compress workstation command 375
 Cond parameter, Browse Output field 207
 CONFIRM command 148
 Data Set List utility (option 3.4) 148
 parameters
 OFF 148
 ON 148
 Confirm Delete field, Data Set List Utility panel 127
 Confirm Delete panel 106
 confirm member delete 128
 Confirm Purge panel 107
 COPY command 146
 Copy Format Selection List panel 190
 copy member 92
 COPY statement 234
 Copy workstation command 375
 Created field
 Data Set List utility 135
 CREATED keyword, SORT command 154
 CSECT compare, Superc 458
 CUA
 defaults
 function key settings 377
 CUA attributes... 40
 CUA attributes workstation command 375
 CUA panel element default values 40
 CUA panel element values (changing) 40
 CUAATTR option, Change Utility 40
 CYLS parameter, Space Units field 98

D

D (DBCS) parameter, Field Type field 189
 D, defined for SuperC 466
 D (delete) line command
 Breakpoints (option 7.8) 339
 Tables (option 7.4) 322, 324
 Variables (option 7.3) 313
 D (delete lines)
 Command Table utility (option 3.9) 186
 Data Set List utility (option 3.4) 145
 Dialog Test (option 7) 303
 Format Specification utility (option 3.11) 191
 SCRIPT/VS (option 4.9) 252
 DA data set organization, DSORG field 135
 DASD volume 78
 Data class field, Allocate New Data Set panel 97
 DATA parameter
 HEX command 70
 data set allocation exit 96
 data set control blocks 140
 Data Set download 178
 Data Set Information panel
 long format 86
 long format for managed data sets 88

Data Set Information panel (*continued*)
 short format 90
 short format for managed data sets 91
 data set list primary commands
 CONFIRM 148
 EXCLUDE 148
 FIND and RFIND 149
 LOCATE 150
 MEMBER 150
 REFRESH 151
 RESET 151
 SAVE 151
 SHOWCMD 152
 SORT 153
 SRCHFOR 154
 VA,VS,VT,VV 155
 Data Set List utility (option 3.4)
 data set list exit 124
 display views and panels
 Attrib 127, 132
 sequence of display views 127
 Space 127, 131
 Total 127, 132
 Volume 127, 130
 line commands
 = (repeat last command) 147
 B (browse data set) 143
 C (catalog data set) 145
 D (delete data set) 145
 E (edit data set) 142
 F (free unused space) 146
 I (data set information) 145
 M (display member list) 143
 P (print data set) 145
 R (rename data set) 145
 S (information (short)) 145
 U (uncatalog data set) 146
 V (view data set) 143
 X (print index listing) 146
 Z (compress data set) 146
 line commands that do not support managed data sets
 C (catalog data set) 145
 U (uncatalog data set) 146
 line commands that support managed data sets
 I (data set information) 145
 R (rename data set) 145
 S (information (short)) 145
 X (print index listing) 146
 list data set 151
 options
 blank - display data set list 128
 P - Print data set list 139
 PV - Print VTOC information 141
 V - Display VTOC information 139
 primary commands
 CONFIRM 148
 FIND 149
 LOCATE 150
 RFIND 149
 SAVE 151
 SHOWCMD 152
 SORT 153

data set list utility line commands
 copy 146
 exclude data set 147
 move 146
 RefAdd 147
 reset 146
 unexclude data set 147
 unexclude first data set 147
 unexclude last data set 147
 Data Set List Utility panel 123
 Data Set List Utility Primary Commands 147
 Data Set List Utility SHOWCMD panel 153
 Data Set Name field
 Foreground Member Parts List panel 260
 SuperC Submit Batch Jobs panel 199
 data set organization 135
 Data Set Password 79
 Data Set utility (option 3.2)
 options
 A - Allocate new data set 95
 blank - data set information 108
 C - Catalog data set 102
 D - Delete entire data set 106
 R - Rename entire data set 102
 S - Data set information (short) 108
 U - Uncatalog data set 105
 options that do not support managed data sets
 C - Catalog data set 102
 U - Uncatalog data set 106
 options that support managed data sets
 blank - Data set information 108
 R - Rename entire data set 103
 S - Data set information (short) 108
 processing with RACF
 D - Delete 107
 R - Rename 103
 R - rename entire data set (GDG) 103
 DAU data set organization, DSORG field 135
 DBCS character 79
 DBCS considerations, SuperC 193
 DC, defined for SuperC 466
 DDDD format, Expiration Date field 100
 Debug command data set field 282
 Debug Options field, Foreground
 FORTRAN interactive debug (option 4.11) 259
 default keylist for Help Panels 22
 delete, defined for SuperC 466
 DELETE, Traces (option 7.7) 336, 337
 delete action prompt workstation command 375
 DELETE command, TSO 127, 148
 delete compose, defined for SuperC 466
 delete matching, defined for SuperC 466
 delete replace, defined for SuperC 466
 delete workstation command 375
 Delete workstation command 375
 Delta parameter, Listing Type field 196, 205

- Description column 185
 - Description field, SCRIPT/VS Formatting
 - Style panel 252
 - Device field, Data Set List utility 135
 - DEVICE keyword, SORT command 154
 - device name parameter for PRINTG 10
 - Dialog Function/Selection Panel,
 - invoking 305
 - Dialog Services (option 7.6), calling a
 - dialog service 330
 - dialog test
 - accessing and updating variables 299
 - available ISPF facilities 299
 - breakpoint cancel (option C) 297
 - environment 297
 - ISPF log generation 299
 - message displayed for severe errors 301
 - NEWPOOL option 300
 - severe error found at breakpoint 301
 - Dialog Test
 - DBCS value format 317
 - log entry for current value of variable 330
 - modifying a table row 321
 - reasons errors occur 301
 - variable usage 300
 - Dialog Test (option 7)
 - Breakpoints (option 7.8) 337
 - commands 301
 - D (delete lines) 303
 - Dialog Services (option 7.6) 330
 - environment 342
 - exceptions to restoration when using
 - Go (option G) 342
 - Exit (option 7.X) 344
 - Functions (option 7.1) 305
 - I (insert lines) 304
 - Log (option 7.5) 328
 - Panels (option 7.2) 308
 - R (repeat lines) 304
 - severe error handling 300
 - Traces (option 7.7) 333
 - Tutorial (option 7.T) 343
 - variable usage 300
 - Variables (option 7.3) 311
 - Dialog Test Primary Option Panel 298
 - Directory blocks field, Allocate New Data
 - Set panel 99
 - DISPLAY command
 - Browse 64
 - parameters
 - CC 65
 - char 65
 - NOCC 65
 - Display Style Options field, SCRIPT/VS
 - Processor panel 249
 - DLMDUP SuperCE process option 395
 - DLREFM SuperCE process option 395
 - DM, defined for SuperC 466
 - Document Composition Facility (DCF) 248
 - double-byte character set (DBCS)
 - column specification in dialog test 318
 - defining data type 189
 - Dialog Test variables format 315
 - double-byte character set (DBCS)
 - (continued)
 - finding a 1-byte hexadecimal string 69
 - Format Specification utility (option 3.11) 186
 - DPACMT Search-For process option 434
 - DPACMT SuperCE process option 396
 - DPADCMT Search-For process
 - option 434
 - DPADCMT SuperCE process option 396
 - DPBLKCL Search-For process
 - option 434
 - DPBLKCL SuperCE process option 396
 - DPCBCMT Search-For process
 - option 434
 - DPCBCMT SuperCE process option 396
 - DPFTCMT Search-For process
 - option 435
 - DPFTCMT SuperCE process option 396
 - DPLINE Search-for process
 - statement 440
 - DPLINE SuperC process statement 416
 - DPLINEC Search-For process
 - statement 440
 - DPLINEC SuperCE process
 - statement 416
 - DPPLCMT Search-For process
 - option 435
 - DPPLCMT SuperCE process option 397
 - DPPSCMT Search-For process
 - option 435
 - DPPSCMT SuperCE process option 397
 - DR, defined for SuperC 466
 - DS1-DS4 fields
 - Extended Search-For - Concatenation
 - Data Set Entry panel 225
 - SuperCE - Concatenation Interactive
 - Entry panel 208
 - DSLIST exit 124
 - DSLIST workstation command 375
 - Dsname Level field, Data Set List Utility
 - panel 124
 - Dsorg field, Data Set List utility 135
 - DSORG keyword, SORT command 154
 - DTEST system command 298
- ## E
- E (EBCDIC) parameter, Field Type
 - field 188
 - E (edit data set) line command, Data Set
 - List utility (option 3.4) 142
 - edit, command table line command 186
 - Edit (option 2)
 - editing a data set 76
 - valid logical record length 75
 - valid record format 75
 - edit action prompt workstation
 - command 375
 - EDIT command, Browse 65
 - Edit Entry Panel 76
 - Edit workstation command 375
 - editing a member 93
 - END
 - Traces (option 7.7) 336, 337
 - END command
 - Breakpoints (option 7.8) 339, 341
 - Command Table utility (option 3.9) 185
 - Dialog Test (option 7) 303
 - Variables (option 7.3) 313
 - Enter Session Manager Mode field 294
 - Environ settings 42
 - ENVIRON system command 42
 - environment, Dialog Test 297
 - errors
 - message displayed during dialog test
 - processing 301
 - reasons for occurring during Dialog
 - Test 301
 - trigger statement 237
 - EXCLUDE command 148
 - Exclude Data Set command 147
 - Execution Parm's field
 - COBOL interactive debug 257
 - Exit (option 7.X) ending Dialog Test 344
 - Expanding Packed Data 233
 - expansion trigger, defined 234
 - Expiration data field, Allocate New Data
 - Set panel 99
 - Expires field, Data Set List utility 135
 - EXPIRES keyword, SORT command 154
 - explosion chain, defined 263
 - extended binary coded decimal
 - interchange code (EBCDIC)
 - defining data type 188
 - using numbered data 189
 - Extended Search-For - Concatenation
 - Batch Entry panel 226
 - Extended Search-For - Concatenation
 - Data Set Entry panel 225
 - Extended Search-For Compare utility
 - applications 390
 - options
 - B - submit batch search-for 226
 - Blank - search-for strings 225
 - E - edit Search-For statements data
 - set 227
 - P - select Search-For process
 - options 227
 - overview 221
 - process options 391
 - process statements 403
 - return codes 452
 - SuperC program description 388
 - utility differences 387
 - Extended Search-For process statements,
 - notation conventions 437
 - Extended Search-For Utility panel 222
 - extended utilities 388
- ## F
- F (foreground) parameter, Mode
 - field 194
 - F (foreground) parameter, Mode field,
 - Search-For Utility panel 217
 - F (free unused space) line command,
 - Data Set List utility (option 3.4) 146
 - F (function) pool, Pool field 336
 - F record format, Record Format field 99
 - false match, correcting in SuperC 455

false match, defined for SuperC 469
 family printer type parameter for
 PRINTG 10
 field 339, 343
 Active 335, 337, 339
 AFTER 343
 Application 343
 BEFORE 343
 Breakpoint 343
 by row number 317
 BY ROW NUMBER 317
 current row 317
 Current row count 326, 328
 Current row pointer 325, 327
 Current status 343
 Cursor field 310
 Cursor position 310
 Date created 326, 327
 DBCS column specification 318
 Dialog services to be traced 335
 Display in window 310
 Function 335, 337, 339
 ID 308
 KEYS 325
 LANG 307
 Last date modified 326, 327
 Last modified by 326, 328
 Last service return code 327
 Last table service 327
 Last time modified 326, 328
 Message id 309
 Message pop-up field 310
 MODE 307
 Modified row count 326, 328
 NAMES 325
 NEWAPPL 308
 NEWPOOL 308
 Number of keys 325
 Number of names 325
 Number of rows 325
 Open option 327
 Open tables 317
 Operation 337
 Original row count 326, 328
 P (pool) 313
 PANEL 306
 Panel name 309
 PASSLIB 308
 PGM 307
 Pool 336
 Qual 339
 Qualification parameter values 340
 Return code 343
 row identification 317
 Row number 320
 Service 339
 Service Name 343
 specifying a DBCS value 317
 Status for this screen 326, 327
 Table available 326
 table name 317
 Table name 320
 Table on disk 327
 Time created 326, 327
 Update count 326, 328
 using the Value field 317
 variable 317

field (*continued*)
 Variable 313, 321
 Virtual storage size 326, 328
 When 339
 WSCMD 308
 Field Length field, Format Definition
 panel 188
 Field Number field, Format Definition
 panel 188
 Field Type field, Format Definition
 panel 188
 field1 parameter, SORT command 153
 field2 parameter, SORT command 153
 File comparison of a complete PDS 472
 File comparison of a sequential data set
 or membered PDS 472
 File parameter, Compare Type field 204
 FILEXFER service 178
 FIND command 149
 Browse
 1-byte hexadecimal strings 69
 character strings, use of 68
 column limitations 69
 conditions for character string
 matches 67
 displaying column numbers
 searched 67
 omitting string delimiters 66
 picture strings, use of 68
 rules for using col-1 and col-2 69
 specifying FIND strings 66
 starting point, direction, and extent
 of search 67
 string not found actions 67
 text strings, use of 68
 using RFIND 69
 using string delimiters 66
 operands
 CHARS|PREFIX|SUFFIX|WORD 66
 col-1 and col-2 66
 NEXT|ALL|FIRST|LAST|PREV 66
 67
 string 66
 FIRST parameter, FIND command 67
 FMVLNS SuperCE process option 397
 fonts, setting for WSA 175
 Foreground (option 4)
 AD/Cycle C/370 compiler (option
 4.16) 265
 Ada/Cycle C/370 compiler (option
 4.15) 264
 Assembler H (option 4.1) 240
 C/370 compiler (option 4.13) 263
 COBOL interactive debug (option
 4.10A) 255
 defined 229
 expanding packed data 233
 FORTRAN interactive debug (option
 4.11) 258
 input data sets 237
 Linkage Editor (option 4.7) 245
 list data sets 238
 Members Parts List (option 4.12) 259
 object data sets 239
 password protection 239
 PL/I optimizing compiler (option
 4.5) 243

Foreground (option 4) (*continued*)
 processing sequence 230
 REXX/370 compiler (option 4.14) 263
 SCRIPT/VS (option 4.9) 247
 using the TSO/E Information Center
 Facility 240
 VS COBOL II compiler (option
 4.2) 241
 VS COBOL II interactive debug
 (option 4.10) 254
 VS FORTRAN compiler (option
 4.3) 242
 VS Pascal compiler (option 4.6) 244
 Foreground AD/370 Compiler
 Information Panel 265
 Foreground ADA/370 Compiler
 Information Panel 264
 Foreground Assembler H panel 241
 Foreground C/370 Compiler Information
 Panel 263
 Foreground Environment Feature 248
 Foreground Linkage Edit panel 246
 Foreground Members Parts List
 panel 260
 Foreground Options
 C/C++ for MVS/ESA 268
 ISPD TLC 265
 Foreground PL/I Optimizing Compile
 panel 244
 Foreground Print Options for Style
 panel 250
 Foreground Print Options panel 233,
 240
 Foreground REXX/370 Compiler
 Information Panel 264
 Foreground Selection panel 229
 Foreground VS COBOL II Compile
 panel 242
 Foreground VS COBOL II Interactive
 Debug panel 255
 Foreground VS FORTRAN Compile
 panel 243
 Foreground VS Pascal Compile
 panel 245
 Format Definition panel 188
 Format Name field
 Format Specification panel 187
 Format Selection List panel 191
 Format Specification panel 187
 Format Specification utility (option 3.11)
 line commands
 D (deleting a format) 191
 R (renaming a format) 191
 S (selecting a format) 192
 U (updating a format) 192
 options
 A - add a new format 188
 C - copy formats 189
 D - delete a format 190
 L or Blank - display format
 list 190
 U - update a format 190
 primary commands
 LOCATE 191
 SORT 192
 FORTRAN interactive debug (option
 4.11) 258

FORTRAN Interactive Debug panel 258
 Free DSCBS field, VTOC Information
 Display 140
 Free Extents field, VTOC Information
 Display 141
 From Format field, Format Specification
 panel 187
 From Table field, Format Specification
 panel 140, 188
 FSCR parameter, MODE field 307
 FTP download 166
 full information workstation
 command 375
 function key defaults, workplace 377
 function key settings, workplace 377
 function keys
 defining functions 23
 specifying labels 23
 specifying number 33
 Functions (option 7.1), testing a dialog
 function 305

G

generic unit address 97
 GET operation 337
 global color change utility 36
 global color change workstation
 command 375
 global GUI color change utility 38
 graphics, settings parameters for
 PRINTG 10
 graphics interface mode, effect on Session
 Manager 231
 Groups For Primary Members field
 Foreground Member Parts List
 panel 260
 Member Parts List Display 263
 GUI Installation, ISPF C/S Install
 Utility 164
 GUI parameter on ISPSTART 172, 173
 GUI parameters, specifying 43
 GWCBL SuperCE process option 397

H

Hardcopy utility (option 3.6)
 additional batch printing
 information 162
 using the TSO/E Information Center
 Facility 162
 Hardcopy Utility panel
 after JCL generation 161
 before JCL generation 159
 with the TSO/E Information Center
 Facility installed 163
 hashsum, defined 472
 HELP command
 displaying column numbers
 searched 67
 HEX command
 Browse 70
 operands
 DATA 70
 OFF 70
 ON 70

HEX command (*continued*)
 operands (*continued*)
 VERT 70
 hexadecimal data, Dialog Test variables
 format 315

I

I (data set information) line command,
 Data Set List utility (option 3.4) 145
 I, defined for SuperC 466
 I (implicit) variable, P (pool) field 313
 I (insert) line command
 Breakpoints (option 7.8) 339
 Tables (option 7.4) 322, 324
 Variables (option 7.3) 313
 I (insert) line command, Command Table
 utility (option 3.9) 186
 I (insert lines), Dialog Test (option
 7) 304
 IBM Products (option 9)
 options
 3 - INFO/MAN 345
 4 - COBOL/SF-F 346
 5 - SDF II 347
 6 - SDF II-P 347
 IC, defined for SuperC 466
 IDPF Search-For process option 435
 IEBCOPY utility 85, 146
 IEBGENER utility 162
 If Partitioned, Replace Like-Named
 Members field 119
 If Sequential, "To" Data Set Disposition
 field 118
 IM, defined for SuperC 466
 image path 51
 implicit variable 313
 INCLUDE statement 234
 inconsistent attributes, defined 101
 INFO/SYS (option 9.3),
 Information/System 345
 information, bottom-of-listing 469
 information action prompt workstation
 command 375
 Information Center Facility
 foreground processing sequence 232
 Hardcopy utility 159
 Outlist utility 181
 Information/System panel 346
 Initial Macro field, Edit Entry panel 61
 Initial View field
 defined 126
 views
 Attrib 127
 sequence of views 126
 Space 127
 Total 127
 Volume 127
 input data sets 237
 insert, defined for SuperC 466
 INSERT, Traces (option 7.7) 336, 337
 insert compose, defined for SuperC 466
 insert matching, defined for SuperC 466
 Installation
 Download Data Set to
 Workstation 164

installation exits
 compress request 85, 146
 data set allocation 96
 data set list (DSLIS) 124
 print utility 159, 181, 232
 Installation program
 Workstation agent 170
 IS data set organization, DSORG
 field 135
 ISPCMD5 182
 ISPD TLC (Option 4.18) 265
 ISPD TLC compile, batch 286
 ISPD TLC interface panel 266, 267, 268,
 286, 287
 ISPF
 default keylist 21, 22
 restrictions
 multivolume data sets 97, 124
 tape 97, 124
 ISPF C/S download 168, 169
 ISPF C/S Download Utility
 C/S method 168
 FTP method 166
 Manual method 169
 ISPF C/S Install option 164
 ISPF C/S Install Utility
 for OS/2 with TCP/IP
 ending a session 173
 starting a session 171
 for UNIX
 starting a session 172
 for Windows
 starting a session 172
 ISPFINST.EXE 170
 the C/S agent window 174
 ISPF C/S Installation 164
 ISPF Command field 291
 ISPF command shell 371
 ISPF Command Shell panel 291
 ISPF command shell workstation
 command 375
 ISPF command table workstation
 command 375
 ISPF referral list
 Workplace (Option 11) 355
 ISPF restrictions
 multivolume data sets 97, 124
 tape 97, 124
 ISPFINST.EXE 170
 ISPTLIB 182
 ISRFORM table 189
 ISRLEMX
 description 234
 member parts list 259
 return codes 237
 ISRSCAN
 description 234
 member parts list 275
 return codes 237
 ISU data set organization, DSORG
 field 135

J

JCL generation
 Assembler and Linkage Editor 276
 compilers 274

- job control language, generating and submitting print jobs 160
- job statement information
 - preventing JES line counting 251
- job stream, submitting a 63, 72
- JobID field, Outlist Utility panel 180
- Jobname field, Outlist Utility panel 180

K

- K (key) variable 319, 321, 323
- KB parameter, Space Units field 98
- keylist
 - defaults for Help Panels 22
 - help panel name 30
 - modification choices 27
- keylist utility 21, 22
- keylist workstation command 375
- keys 21, 22
 - PA1 295
 - Reset 295

L

- label fields
 - defining 24
 - using PFSHOW command 24
- label parameter, LOCATE command 72
- Language field, Foreground Member Parts List panel 260
- large files, partitioning and processing in SuperC 456
- Largest field, VTOC Information Display 141
- LAST parameter, FIND command 67
- LC command 149
- LC command, Data Set List utility (option 3.4) 149
- Library utility (option 3.1)
 - options
 - B - browse member 92
 - Blank - display member list 83
 - C - compress data set 85
 - D - delete member 92
 - E - edit member 93
 - I - data set information 85
 - L - print entire data set 85
 - P - print member 93
 - R - rename member 93
 - S - data set information (short) 89
 - V - view member 93
 - X - print index listing 85
 - options that support managed data sets
 - I - data set information 87
 - S - data set information (short) 91
 - X - print index listing 85
- Library Utility panel 82
- LINE - Dialog Test (option 7) 303
- Line Cmd field, SCRIPT/VS Formatting Style panel 252
- line commands
 - Command Table utility (option 3.9) 185
 - Data Set List utility (option 3.4) 136, 141
 - line commands (*continued*)
 - Format Specification utility (option 3.11) 192
 - SCRIPT/VS (option 4.9) 252
 - line-number operand, LOCATE command 72
 - Line parameter, Compare Type field 204
 - LINE parameter, MODE field 307
 - Linkage Editor (option 4.7)
 - concatenation sequence 247
 - LEL control statements 247
 - overview 245
 - Linkage Editor (option 5.7) 280
 - Linkage Editor concatenation sequence 247
 - Linkage Editor language 247
 - Linkage Editor Options field, Foreground Linkage Editor (option 4.7) 246
 - list action prompt workstation command 375
 - list data set
 - list-id 151
 - prefix 151
 - specifying characteristics 18
 - specifying defaults 15
 - List ID field
 - Batch Selection Panel 273
 - Foreground Print Options panel 238
 - Foreground Selection panel 231
 - list-id parameter
 - SAVE command 151
 - list view workstation command 375
 - listing, SuperC member summary 468
 - Listing DS Name field
 - Extended Search-For Utility panel 224
 - SuperC Utility-Old Data Set Name panel 197
 - Listing Dsn field, SuperCE Utility panel 205
 - Listing DSNNAME field, Search-For Utility panel 217
 - listing title lines, SuperC 465
 - Listing Type field
 - SuperC Utility-Old Data Set Name panel 196
 - SuperCE Utility panel 205
 - listings, Search-for 473
 - listings, side-by-side 470
 - LMCSFC SuperCE process option 398
 - LMTO Search-For process option 435
 - LNCT Search-For process statement 442
 - LNCT SuperC process statement 418
 - LNFMTO Search-For process statement 435
 - load module library display
 - expanded Line Command field 144
 - Local parameter, Print Mode field 160
 - Local Printer ID field, Hardcopy Utility panel 160
 - LOCATE
 - Dialog Test (option 7) 303
 - Traces (option 7.7) 336, 337
 - LOCATE character string 303
 - LOCATE command 150
 - Breakpoints (option 7.8) 339
 - Browse 71

- LOCATE command (*continued*)
 - Data Set List utility (option 3.4) 150
 - Format Specification utility (option 3.11) 191
 - parameters
 - label 72
 - line-number 72
 - lparm 150
 - name 191
 - Variables (option 7.3) 313
- locate workstation command 375
- LOCS SuperCE process option 398
- Log (option 7.5)
 - displaying the ISPF log 328
 - logged trace output 329
 - reasons log is not available 329
- log data set
 - specifying defaults 15
- long message
 - line placement 8
 - specifying 8
- long message areas, displaying in a pop-up 8
- LONG parameter, Listing Type field 196, 205
- LONGLN Search-For process option 435
- LONGLN SuperCE process option 398
- lparm parameter, LOCATE command 150
- LPSF Search-For process option 436
- LPSFV Search-For process statement 443
- Lrecl field, Data Set List utility 135
- LRECL keyword, SORT command 154
- LSTCOLM Search-For process statement 444
- LSTCOLM SuperC process statement 419
- LTO Search-For process option 436

M

- M (display member list) line command, Data Set List utility (option 3.4) 143
- M (machine) parameter, Printer Carriage Control field 181
- M (mixed) parameter, Field Type field 189
- M record format, Record Format field 99
- managed data set
 - displaying information for 87
- Management class field, Allocate New Data Set panel 97
- Manual download 169
- match, defined for SuperC 466
- match compose, defined for SuperC 466
- matching input files, SuperC 454
- MB parameter, Space Units field 98
- MC, defined for SuperC 466
- MEMBER command
 - description 150
- member expansion return codes 237
- member list display
 - expanded Line Command field 144
- Member list workstation command 375
- member not found 263

- member parameter
 - BROWSE command 63
 - SYSTEM DD statement 276
- Member Parts List (option 4.12)
 - CALL statement format 259
 - member not found 263
 - options
 - 1 - browse/print member parts list 261
 - 2 - write member parts data set 262
 - overview 259
 - Procedure Division 259
 - record format 262
- Member Parts List (option 5.12) 283
- member parts list display 261
- member summary listing, SuperC 468
- membered PDS, defined 195
- Message field, display view panels 133
- MESSAGE keyword, SORT
 - command 154
- mixed data
 - B (browse data set) line
 - command 143
 - defining data type 189
 - E (edit data set) line command 142
 - using numbered data 189
 - V (view data set) line command 143
- Mixed Mode 79
- MIXED Search-For process option 436
- MIXED SuperCE process option 398
- Mod parameter, "To" Data Set
 - Disposition field 118
- Mode, Mixed 79
- Mode field
 - Search-For Utility panel 217
 - SuperC Utility panel 194
- MOUNT authority 98
- MOVE command 146
- move/copy 372
- Move/Copy utility (option 3.3)
 - alias entries 122
 - options
 - C and CP - copying data sets 117
 - M and MP - moving data sets 119
 - with load modules 120
 - without load modules 120
- Move/Copy Utility panel 116
- move member 93
- Move workstation command 375
- multiple search strings, entering 218
- Multiple Search Strings panel 218
- multivol indicator 134
- multivolume data sets 97, 124
- MVOL, Sort command field 154

N

- name, Writer 160
- Name field
 - display view panels 133
- NAME keyword
 - LOCATE command 191
 - SORT command 154, 192
- NARROW Super CE process option 398
- NCHGT Search-For process
 - statement 445

- NCHGT SuperC process statement 420
- new data set, defined for SuperC
 - description 192
 - examples 461
 - used with SuperCE 202
- New DS Name field, SuperCE Utility
 - panel 203
- New Output Class field, Outlist Utility
 - panel 181
- New UserID field, Reset ISPF Statistics
 - panel 156
- New Version Number field, Reset ISPF
 - Statistics panel 157
- NEWAPPL field 308
- NEWPOOL field 308
- NEXT parameter, FIND command 67
- NO parameter
 - Active field
 - breakpoints 339
 - function traces 335
 - variable traces 337
 - Browse Output field 207
 - Confirm Delete Request field,
 - deselect 127
 - Replace like-named PDS members
 - field 119
 - Select pack option For "To" data set
 - field 118
 - Specify additional search strings field,
 - deselect 217
 - Table available field 326
 - Table on disk field 327
- NOACTBAR workstation command 375
- NOCC parameter, DISPLAY
 - command 65
- Nolist parameter, Listing Type field 197, 205
- non-paired change, defined for
 - SuperC 469
- non-paired members, defined for
 - SuperC 468
- NOP action, ACTION column 185
- NOPRTCC Search-For process
 - option 436
- NOPRTCC SuperCE process option 398
- NOSEQ parameter, Sequence Numbers
 - field 197
- NOSEQ Search-For process option 436
- NOSEQ SuperCE process option 399
- NOSUMS Search-For process option 436
- NOSUMS SuperCE process option 399
- NOT OPEN parameter 326, 327
- NOWRITE parameter 327
- NTITLE SuperC process statement 424, 447
- Number of Copies field, Hardcopy Utility
 - panel 163

O

- object data sets 239
- Object field
 - Foreground VS FORTRAN compiler
 - (option 4.3) 243
- OCHGT SuperC process statement 420
- OFF parameter
 - CONFIRM command 148

- OFF parameter (*continued*)
 - HEX command 70
 - SHOWCMD command 152
- old data set, defined for SuperC 461
- Old DS Name field, SuperCE Utility
 - panel 203
- Old parameter, "To" Data Set Disposition
 - file 118
- ON parameter
 - CONFIRM command 148
 - HEX command 70
 - SHOWCMD command 152
- Open option field
 - NOWRITE parameter 327
 - SHR NOWRITE parameter 327
 - SHR WRITE parameter 327
 - WRITE parameter 327
- OPEN parameter 326, 327
- Open workstation command 375
- OPT field 306
- option
 - Cancel (option C) 342
 - Go (option G) 342
- Other field
 - Batch Assembler H (option 5.1) 277
 - Batch Linkage Editor (option 5.7) 281
 - Batch VS COBOL II compiler (option
 - 5.2) 278
 - Batch VS FORTRAN compiler (option
 - 5.3) 278
 - Foreground PL/I optimizing compiler
 - (option 4.5) 244
 - Foreground VS COBOL II compiler
 - (option 4.2) 242
 - Foreground VS FORTRAN compiler
 - (option 4.3) 243
 - Foreground VS Pascal compiler
 - (option 4.6) 245
- OTITLE SuperC process statement 424, 447
- OUTDD DD field, SuperC Submit Batch
 - Jobs panel 200
- Outlist utility (option 3.8)
 - options
 - Blank - display job output 182
 - D - delete job output from
 - SYSOUT hold queue 181
 - L - list job names/IDs via the TSO
 - STATUS command 181
 - P - print job output and delete
 - from SYSOUT hold queue 181
 - R - requeue job output to a new
 - output class 182
- Outlist Utility panel 180
- OVSUM listing type
 - File comparison of a complete
 - PDS 472
 - File comparison of a sequential data
 - set or membered PDS 472
- OVSUM parameter, Listing Type
 - field 196, 205

P

- P (print) line command
 - Data Set List utility (option 3.4) 145
- P (profile) pool, Pool field 336

- P (profile) variable, P (pool) field 313
- PA1 key 295
- packed data
 - defined 233
- packing data, Foreground (option 4) 230
- pad characters for panel input fields 12
- paired change, defined for SuperC 469
- paired members, defined for SuperC 469
- panel
 - Add Row 323
 - confirm table row delete 320
 - Dialog Test Tutorial 344
 - Display 309
 - display row 319
 - Function Traces 335
 - Invoke Dialog Service 331
 - Message Display 311
 - modify row 321
 - Table Structure 325
 - Traces 334
 - Variable Traces 336
 - Variables 312
- Panel
 - Breakpoint Primary Option 341
 - Special Display 333
- panels
 - data set list display view panels
 - ATTRIB view panel 132
 - Space view panel 131
 - Total view panel 132
 - VOLUME view panel 130
 - load module library display
 - expanded Line Command field 144
 - member list display
 - expanded Line Command field 144
 - Tables 316
 - working with dialog tables 316
- Panels (option 7.2), testing dialog panels 308
- parameter string 340
- PARM field 307
- partitioning and processing in SuperC, large files 456
- PASSLIB field 308
- Passthru action
 - Action column 185
- Password, Data Set 79
- Password field
 - Foreground Data Entry panel 239
 - Foreground Selection panel 231
- password protection 239
- PDS Member List field
 - defined 204
 - parameters 222
- personal data set lists command 375
- personal library lists command 375
- physical record length, defined 99
- picture strings, use of 68
- PL/I optimizing compiler (option 4.5) 243
- PL/I optimizing compiler (option 5.5) 279
- PO data set organization, DSORG field 135

- point and shoot workstation
 - command 375
- POU data set organization, Dsorg field 135
- prefix parameter
 - data set list to ISPF list data set 151
 - FIND command 66
 - SYSTEM DD statement 276
- PREFIX parameter, FIND command 66
- PREV parameter, FIND command 67
- primary commands
 - Browse 63
 - CANCEL 303
 - Command Table utility (option 3.9) 185
 - Data Set List utility (option 3.4) 147
 - END 303
 - Format Specification utility (option 3.11) 191
 - LOCATE 303
 - QUAL 303
 - RESUME 303
- Primary Commands, Data Set List Utility 147
- primary library, defined 263
- primary member, defined 263
- Primary quantity field, Allocate New Data Set panel 98
- print action prompt workstation
 - command 375
- print data set command 375
- print data set index workstation
 - command 375
- Print data set list workstation
 - command 375
- Print ID field, COBOL Interactive Debug panel 256, 257
- Print Mode field
 - parameters
 - BATCH parameter 160
 - LOCAL parameter 160
 - SCRIPT/VS Processor panel 251
- print output data sets 257
- print utility exit
 - foreground processing sequence 232
 - Hardcopy utility 159
 - Outlist utility 181
- Print VTOC information workstation
 - command 375
- Print workstation command 375
- Printer Carriage Control field, Outlist Utility panel 181
- Printer Format field, Hardcopy Utility panel 163
- Printer Location field, Hardcopy Utility panel 163
- PRINTG
 - parameters 10
 - specifying printer output 10
- printing
 - Extended Search-For listing in batch mode 226
 - output 159
 - SuperCE listing in batch mode 209
- Procedure Division 259
- process options, Search-For 433

- Process Options field
 - Extended Search-For Utility panel 224
 - SuperCE Utility panel 206
- process statements, Search-For 437
- profile, defined for SuperCE 194
- Profile DSN field, SuperC Utility panel 194
- Profile Name field, Edit Entry Panel 61
- Prog ID field, COBOL Interactive Debug panel 256
- PS data set organization, DSORG field 135
- PS-E 135
- PSU data set organization, Dsorg field 135
- Purge Data Set field, Confirm Purge panel 107
- PUT operation 337

Q

- QUAL
 - command - Breakpoints (option 7.8) 339
 - Dialog Test (option 7) 303
- qualification parameter values
 - Qualify action bar pull-down Breakpoints... choice 339
 - Qualifications... choice 339

R

- R (rename) line command
 - Data Set List utility (option 3.4) 145
 - Format Specification utility (option 3.11) 191
- R (repeat) line command
 - Breakpoints (option 7.8) 339
 - Command Table utility 186
 - Tables (option 7.4) 322, 324
- R (repeat) line command, Command Table utility 186
- R (repeat lines), Dialog Test (option 7) 304
- RACE, processing with
 - D - delete 107
 - R - rename 103
- Recfm field, Data Set List utility 135
- RECFM keyword, SORT command 154
- Record format field, Allocate New Data Set panel 99
- Record length field, Allocate New Data Set panel 99
- RefAdd command 147
- Referred field, Data Set List utility 135
- REFERRED keyword, SORT command 154
- REFMOVR SuperCE process option 399
- reformat new, defined for SuperC 466
- reformat old, defined for SuperC 466
- REFRESH command 151
- rename 373
- rename action prompt workstation
 - command 375
- Rename Data Set panel 103

- rename data set with expiration date 104
- rename processing with RACF 103
- rename workstation command 375
- Rename workstation command 375
- renaming data sets
 - with expiration date 104
- REPEAT, Traces (option 7.7) 336, 337
- reset action prompt workstation command 375
- RESET command 146, 151
 - Browse 72
- Reset ISPF Statistics panel 156
- Reset ISPF Statistics utility (option 3.5) options
 - D - delete ISPF statistics 158
 - R - reset (create/update) ISPF statistics 158
- results of resetting statistics 158
- valid logical record lengths 155
- RESET key
 - restriction 24
- reset member 93
- Reset Mod Level field, Reset ISPF Statistics panel 157
- Reset Seq Numbers field, Reset ISPF Statistics panel 157
- reset statistics 368
- restrictions on member expansion and member parts lists
 - all programming languages 235
 - assembler 235
 - COBOL 236
 - FORTRAN 236
 - Pascal 236
 - PL/I 236
 - SCRIPT/VS 236
- RESUME - Dialog Test (option 7) 303
- return codes
 - Batch JCL generation 237, 275
 - member expansion 237
 - SuperC 452
- REXX/370 compiler
 - batch processing 284
 - foreground processing 263
- REXX error exits 294
- RFIND command 149
 - Data Set List utility (option 3.4) 149
 - using 69
- RN, defined for SuperC 466
- Rnn parameter 339
- RO, defined for SuperC 466
- rules
 - for substituting slash (/) for data set name 136
 - for using the col-1 and col-2 operands 69
 - service call image for function trace entries 330
 - using the add row option 323
 - using the Dialog Test Breakpoints option 341
 - using the Modify Row option 321

S

- S (information (short)) line command, Data Set List utility (option 3.4) 145
- S (select) line command
 - Format Specification utility (option 3.11) 192
 - SCRIPT/VS (option 4.9) 252
- S (shared) pool, Pool field 336
- S (shared) variable, P (pool) field 313
- S record format, Record Format field 99
- SAVE command 151
 - Data Set List utility (option 3.4) 151
 - parameters
 - list-id 151
 - name 192
- SCLM (option 10)
 - overview 349
- SCLM Primary Option Menu 349
- SCLM Settings 119, 157
- Screen Definition Facility II panel 347, 348
- screen format, specifying 9
- SCRIPT/VS (option 4.9) 248
 - changing style options 252
 - line commands
 - D (delete) 252
 - S (select) 252
 - selecting a formatting style 251
 - using the TSO/E Information Center Facility 253, 254
- SCRIPT/VS Options for Style panel 253
- SCRIPT/VS Processor panel 248
- SDF II (option 9.6), Screen Definition Facility II - Editors and Utilities 347
- SDF II-P (option 9.7), Screen Definition Facility II - Prototype 347
- SDUPM Search-For process option 436
- Search DS Name field, Extended Search-For Utility panel 222
- Search-For listings, SuperC 473
- Search-For process options 433
- Search-For process statements 437
- Search-For Process Statements panel 228
- Search-For Utility - Submit Batch Jobs panel 221
- Search-For utility (option 3.14)
 - applications 390
 - invoking directly 458
 - process options
 - ANYC (any case) 433
 - APNDLST (appends the listing to a data set) 434
 - CKPACKL 434
 - COBOL (ignore columns 1-6) 434
 - DPACMT (ignore comment lines) 434
 - DPADCMT (ignore ADA type comments) 434
 - DPBLKCL (ignore blank lines) 434
 - DPBCBMT (ignore COBOL type comments) 434
 - DPFTCMT (ignore FORTRAN type comments) 435
 - DPPLCMT (ignore PL/I type comments) 435

- Search-For utility (option 3.14) *(continued)*
 - process options *(continued)*
 - DPPSCMT (ignore PASCAL type comments) 435
 - IDPFX (identifier prefixed) 435
 - LMTO (list group members totals only) 435
 - LNFMTO (list not found member/data set totals only) 435
 - LONGLN (long lines) 435
 - LPSF (list previous Search-For following lines) 436
 - LTO (list totals only) 436
 - MIXED 436
 - NOPRTCC (no printer control columns) 436
 - NOSEQ (no sequence numbers - they do not exist) 436
 - NOSUMS (no summary listing section) 436
 - SDUPM (search duplicate members) 436
 - SEQ (sequence numbers - ignore columns 73-80) 436
 - XREF (cross reference strings) 436
 - process statements
 - CMPCOLM (compare columns) 438
 - CMPLINE (compare lines) 439
 - DPLINE (don't process lines) 440
 - DPLINEC (continuation condition of DPLINE) 440
 - LNCT (line count) 442
 - LPSFV (count value) 443
 - LSTCOLM (list columns) 444
 - NCHGT (change text of new text string) 445
 - SELECT (select members/data sets to be searched) 448
 - SLIST (statements data set listing control) 449
 - SRCHFOR (Search-For strings in the input data sets) 450
 - SRCHFORC (continuation condition of SRCHFOR) 450
 - return codes 452
 - selecting members from a member list 220
 - SuperC program description 388
 - utility differences 387
- Search-For Utility panel 216
- Search Member List panel 220
- Search String field, Search-For Utility panel 216
- search strings, multiple 218
- SearchFor extended workstation command 375
- SearchFor workstation command 375
- Secondary quantity field, Allocate New Data Set panel 99
- Select action, Action column 184
- SELECT command
 - Format Specification utility (option 3.11) 192
- Select SCRIPT/VS Formatting Style panel 252

- SELECT Search-For process statement 448
- SELECT service 298
- SELECT SuperC process statement 430
- select workstation command 375
- SEQ parameter, Sequence Numbers field 197
- SEQ Search-For process option 436
- SEQ SuperCE process option 399
- Sequence Numbers field, SuperC Utility - Old Data Set Name panel 197
- Serial, Volume 78
- Session Manager
 - Command (option 6) 294
 - Foreground (option 4) 230
 - Member Parts List (option 4.12) 261
 - SCRIPT/VS 249
 - using 294
- Settings option 5
- Settings workstation command 375
- SETVERB action
 - Action column 185
- shift-in characters
 - in Dialog Test variables 315
 - using the Value field 317
- shift-out characters
 - in Dialog Test variables 315
 - using the Value field 317
- short information command 375
- SHOWCMD command 152
 - Data Set List utility (option 3.4) 152
 - parameters
 - OFF 152
 - ON 152
- SHR NOWRITE parameter 327
- SHR WRITE parameter 327
- side-by-side listings, SuperC 470
- Size field
 - VTOC Information Display 140
- SLIST process statement
 - Search-For 449
 - SuperC 432
- smart action 379
- Software Configuration and Library Manager (SCLM) 349
- SORT command 153
 - Data Set List utility (option 3.4) 153
 - Format Specification utility (option 3.11) 192
 - keywords
 - %USED 154
 - BLKSZ 154
 - CREATED 154
 - DEVICE 154
 - DSORG 154
 - EXPIRES 154
 - LRECL 154
 - MESSAGE 154
 - NAME 154
 - RECFM 154
 - REFERRED 154
 - TRACKS 154
 - VOLUME 154
 - XT 154
 - parameters
 - field1 153
 - field2 153
- SORT command (*continued*)
 - parameters (*continued*)
 - NAME 192
 - TIME 192
 - source data for SuperC listings 462
 - Source Data Online field, Batch Selection panel 272
 - Source Data Packed field
 - Batch Selection panel 272
 - Foreground Print Options panel 234
 - Foreground Selection panel 230
 - Source field, COBOL Interactive Debug panel 256
 - Source Type field, Foreground Selection panel 231
 - Space display view, Initial View field 127
 - Space units field, Allocate New Data Set panel 98
 - Specify additional strings field, Search-For Utility panel 217
 - Specify Pack option for "To" Data Set field 118
 - split-screen mode
 - command line placement 8
 - SRCHFOR command, Data Set List utility (option 3.4) 154
 - SRCHFOR Search-For process
 - statement 450
 - SRCHFORC Search-For process
 - statement 450
 - standard Search-For utility, entering
 - multiple search strings 218
 - standard utilities 387
 - Start Column field 188
 - Start GUI Session 172, 173
 - starting a GUI session
 - from Settings (option 0) 44
 - Statements Dsn field
 - Extended Search-For Utility panel 224
 - SuperCE Utility panel 206
 - statistics
 - creating or resetting 158
 - Status for Table panel
 - table not open 326
 - table open 327
 - Storage class field, Allocate New Data Set panel 97
 - string parameter
 - FIND command 66
 - style, defined for SCRIPT/VS 248
 - Style field
 - SCRIPT/VS Formatting Style panel 252
 - SCRIPT/VS Processor panel 248
 - SUBMIT command, BROWSE 63, 72
 - Submit workstation command 375
 - submitting a job stream 63, 72
 - SUFFIX parameter, FIND command 68
 - Superc
 - CSECT compare 458
 - SuperC, DBCS considerations 193
 - SuperC Activate/Create Profile options
 - A - activate 213
 - C - create 213
 - D - default 214
- SuperC alias members 457
- SuperC CLIST interface 214
- SuperC compare types
 - Byte 205
 - different comparison results 456
 - File 204
 - Line 204
 - Word 204
- SuperC Compare utility
 - correcting false matches 455
 - different comparison results 456
 - filtering priority for input lines 453
 - find match example 454
 - invoking directly 458
 - partitioning and processing large files 456
 - process statements
 - allowed by compare type, table 406
 - CHNG 407
 - CHNGV 407
 - CMPBOFS 408
 - CMPCOLM 409
 - CMPCOLMN 409
 - CMPCOLMO 409
 - CMPLINE 410
 - CMPSECT 412
 - DPLINE 416
 - DPLINEC 416
 - LNCT 418
 - LSTCOLM 419
 - NCHGT 420
 - NTITLE 424, 447
 - OCHGT 420
 - OTITLE 424, 447
 - SELECT 430
 - SLIST 432
- SuperC comparison process options
 - COVSUM 395
 - DPCPCMT 396, 434
 - DPMACMT 396, 435
 - FINDALL 435
 - FMSTOP 397, 435
 - UPDREV 401, 481, 483
 - UPDREV2 401, 483
 - Y2DTONLY 402
- SuperC comparison process statements
 - COLHEAD 414, 415
 - end-position (NEXCLUDE operand) 422
 - end-position (NFOCUS operand) 423
 - end-position (OEXCLUDE operand) 422
 - end-position (OFOCUS operand) 423
 - fixed (Y2PAST operand) 431
 - NEXCLUDE 422
 - NFOCUS 423
 - NY2AGE 425
 - NY2C 426
 - NY2D 426
 - NY2P 426
 - NY2Z 426
 - OEXCLUDE 422
 - OFOCUS 423
 - OY2AGE 425
 - OY2C 426
 - OY2D 426

SuperC comparison process statements
(continued)

- OY2P 426
- OY2Z 426
- RCVAL=number (REVREF operand) 429
- REFID=name (REVREF operand) 429
- REVREF 429
- sliding (Y2PAST operand) 431
- start-position (NEXCLUDE operand) 422
- start-position (NFOCUS operand) 423
- start-position (OEXCLUDE operand) 422
- start-position (OFOCUS operand) 423
- Y2PAST 431

SuperC Defaults panel 215

SuperC extended workstation command 375

SuperC listing prefix codes

- I 466
- blank 466
- D 466
- DC 466
- DM 466
- DR 466
- I 466
- IC 466
- IM 466
- MC 466
- RN 466
- RO 466

SuperC listing source data 462

SuperC listing types

- CHNG 196, 205
- Delta 196, 205
- Long 196, 205
- Nolist 197, 205
- OVSUM 196, 205

SuperC listings

- overview 461
- prefix codes 466
- source and index listings 461

SuperC load module compares 457

SuperC Member List panel 198

SuperC process options

- APNDUPD 474
- UPDCMS8 475
- UPDCNTL 475
- UPDMVS8 479
- UPDPDEL 480
- UPDSEQ0 483
- UPDSUMO 484

SuperC Process Statements panel 211

SuperC program, requirements for 389

SuperC programming interface 214

SuperC search process options

- DPCPCMT 396, 434
- DPMACMT 396, 435
- FINDALL 435
- FMSTOP 397, 435

SuperC search process statements

- COLHEAD 414, 415

SuperC type-of-difference codes

- LEN 467

SuperC type-of-difference codes
(continued)

- N-LN# and O-LN# 467
- types 466

SuperC update files

- UPDREV 481, 482
- UPDREV2 Revision File (2) 483

SuperC Utility - Submit Batch Jobs panel

- overview 199
- using NOLIST 202

SuperC utility (option 3.12)

- applications 390
- new data set 192
- old data set 195
- printing a Search-For listing in batch mode 220
- printing a SuperC listing in batch mode 199
- process options 391
- process statements 403
- program description 388
- return codes 452
- specifying members on a member list 197
- submit options
 - 1 - generate output listing in DATA SET NAME 199
 - 2 - generate output listing using completed //OUTDD DD 200
- blank - generate output listing to SYSOUT CLASS 199
- utility differences 387

SuperC utility, requirements for 389

SuperC Utility panel 193

SuperC workstation command 375

SuperCE - Concatenation Batch Entry panel 209

SuperCE - Concatenation Interactive Entry panel 208

SuperCE - Profile Manager panel

- option A - Activate 213
- option C - Create 213
- option D - Defaults 214

SuperCE Compare utility

- CKPACKL 395
- UPDLDEL Long source and Delta data set 479
- UPDLDEL prefixed Delta data set 480

SuperCE process statements, notation conventions 403

SuperCE Profile Browse Display panel 212

SuperCE utility (option 3.13)

- applications 390
- options
 - A - activate profiles and defaults 211
 - B - submit batch data set compare 208
 - Blank - compare data sets 207
 - E - edit SuperCE statements data set 210
 - P - select process options 391
 - P - select SuperCE process options 209

SuperCE utility (option 3.13) (continued)
options (continued)

- S - Extended Search-For utility 221

process options

- ANYC (any case) 394
- APNDLST (appends the listing to a data set) 394
- APNDUPD (append update output) 395
- CKPACKL (check for packed data) 395
- CNPML (count non-paired member lines) 395
- COBOL (ignore columns 1-6) 395
- DLMDUP (don't list matching duplicate lines) 395
- DLREFM (don't list old data set reformatted lines) 395
- DPACMT (ignore comment lines) 396
- DPADCMT (ignore ADA type comments) 396
- DPBLKCL (ignore blank lines) 396
- DPCBCMT (ignore COBOL type comments) 396
- DPFTCMT (ignore FORTRAN type comments) 396
- DPPLCMT (ignore PL/I type comments) 397
- DPPSCMT (ignore PASCAL type comments) 397
- FMVLNS (flagged moved lines) 397
- GWCBL (generate change bars) 397
- LMCSFC (list name, number of bytes, and hashum) 398
- LOCS (list only changed members or data sets) 398
- LONGLN (create listing with 203 columns) 398
- MIXED 398
- NARROW (create listing with 132 columns) 398
- NOPRTCC (no printer control columns) 398
- NOSEQ (no sequence numbers--they do not exist) 399
- NOSUMS (no summary listing section) 399
- overview 391
- REFMOVR (reformat override) 399
- SEQ (sequence numbers--ignore columns 73-80) 399
- UPDCMS8 (update CMS 8 format) 399
- UPDCNTL (update control) 399
- UPDLDEL (source data set with delta changes) 400
- UPDMVS8 (update MVS 8 format) 400
- UPDPDEL (update prefix delta lines) 400

SuperCE utility (option 3.13) *(continued)*
 process options *(continued)*
 UPDSEQ0 (update sequence 0) 401
 UPDSUMO (update summary only) 402
 WIDE (side-by-side list with 202 columns) 402
 XWDCMP (extended word compare) 402
 process statements 403
 return codes 452
 SuperC program description 388
 SuperCE utility 202
 utility differences 387
 SuperCE Utility panel 203
 symbolic debug data sets 257
 SYSLIB field
 Batch Linkage Editor (option 5.7) 281
 Foreground Linkage Editor (option 4.7) 246
 SYSLIN field
 Batch Linkage Editor (option 5.7) 281
 Foreground Linkage Editor (option 4.7) 246
 SYSOUT Class field
 Batch Selection panel 273
 Hardcopy Utility panel 160
 SuperC - Submit Batch Jobs panel 199
 system command table 182
 system commands
 DTEST 298
 system register for WSA 176
 SYSTEM DD statement, parameters
 member 276
 prefix 276

T

T (truncation) column 184
 T (variable types) field
 K (key) variable
 add row 323
 delete row 321
 display row 319
 N (name) variable
 add row 323
 delete row 321
 display row 319
 S (save) variable
 add row 323
 delete row 321
 display row 319
 T record format, Allocate New Data Set panel 99
 table input library 182
 Tables (option 7.4)
 1—display row 318
 2—delete row options 319
 3—modify row 320
 4—add row 322
 5—display structure 324
 6—display status 325
 add row line command 324
 CANCEL add row primary command 324

Tables (option 7.4) *(continued)*
 CANCEL modify row primary command 322
 D (delete) add row line command 324
 D (delete) modify row line command 322
 END add row primary command 324
 END display row command 319
 END modify row primary command 322
 I (insert) add row line command 324
 I (insert) modify row line command 322
 LOCATE add row primary command 324
 LOCATE display row command 319
 LOCATE display structure command 325
 LOCATE modify row primary command 322
 R (repeat) add row line command 324
 R (repeat) modify row line command 322
 tape 97, 124
 TCP/IP address
 definition 49
 TERMIN command procedure statements 294
 terminal characteristics, specifying 9
 terminal data set, defined 276
 terminal type, specifying 10
 terminals
 Batch Assembler H (option 5.1) 276
 Batch Linkage Editor (option 5.7) 281
 Batch VS COBOL II compiler (option 5.2) 277
 Batch VS FORTRAN compiler (option 5.3) 278
 Test field
 Foreground VS COBOL II compiler (option 4.2) 242
 testing
 dialogs 297
 TSO 297
 usual test methods for dialog 297
 text strings, use of 68
 TIME parameter, SORT command 192
 Total display view, Initial View field 127
 trace output in ISPF log
 function trace entries 329
 trace header entries 329
 variable trace entries 330
 Traces (option 7.7)
 1—function traces 334
 2—variable traces 336
 CANCEL Function Traces primary command 336
 CANCEL Variable Traces primary command 337
 D (delete) Function Traces line command 336
 D (delete) Variable Traces line command 337

Traces (option 7.7) *(continued)*
 END Function Traces primary command 336
 END Variable Traces primary command 337
 I (insert) Function Traces line command 336
 I (insert) Variable Traces line command 337
 LOCATE Function Traces primary command 336
 LOCATE Variable Traces primary command 337
 R (repeat) Function Traces line command 336
 R (repeat) Variable Traces line command 337
 working with trace specifications 333
 Tracks field
 Data Set List utility 135
 VTOC Information Display 140
 TRACKS keyword, SORT command 154
 trigger statement errors 237
 triggers
 expansion trigger, definition 234
 statement errors 237
 user-defined 234
 Trks/Cyls field, VTOC Information Display 140
 TRKS parameter, Space Units field 98
 TSO
 CLISTS and REXX EXECs
 Data Set List utility (option 3.4) 136
 entering 293
 variables 138
 commands
 ACCOUNT 98
 ALLOCATE 96
 DELETE 148
 TEST 297
 TSO ACCOUNT 78
 TSO command 369
 TSO command for member 93
 TSO workstation command 375
 TTR data 85
 Tutorial (option 7.T), displaying 343
 type-of-difference codes, SuperC 466

U

U (uncatalog data set) line command, Data Set List utility (option 3.4) 146
 U (updating a format) line command, Format Specification utility (option 3.11) 192
 U record format, Record Format field 99
 uncatalog workstation command 375
 Unexclude Data Set command 147
 Unexclude First Data Set command 147
 Unexclude Last Data Set command 147
 Unit field, VTOC Information Display 140
 unmovable data set, defined 135
 UPD parameter, BROWSE Output field 207

- update data set control output examples, SuperC 474
- Update DS Name field, SuperC Utility - Old Data Set Name panel 196
- Update Dsn field, SuperCE Utility panel 206
- UPDCMS8 SuperCE process option 399, 475
- UPDCMS8 update data set 475
- UPDCNTL SuperCE process option 399, 475
- UPDCNTL update data set and formats 475
- UPDLDEL SuperCE process option 400
- UPDMVS8 SuperCE process option 400, 479
- UPDPDEL SuperCE process option 400, 480
- UPDPDEL update data set 480
- UPDSEQ0 SuperCE process option 401, 483
- UPDSEQ0 update data set 483
- UPDSUMO SuperCE process option 402, 484
- UPDSUMO update data set 484
- user-defined trigger 234
- Utilities (option 3)
 - Command Table utility (option 3.9) 182
 - Data Set List utility (option 3.4) 123
 - Data Set utility (option 3.2) 93
 - Format Specification utility (option 3.11) 186
 - Hardcopy utility (option 3.6) 159
 - ISPF C/S Install (option 3.1) 82
 - Library utility (option 3.1) 82
 - Move/Copy utility (option 3.3) 115
 - Outlist utility (option 3.8) 179
 - Reset ISPF Statistics utility (option 3.5) 155
 - Search-For utility (option 3.14) 215
 - SuperC utility (option 3.12) 192
 - SuperCE utility (option 3.13) 202
 - Utility Selection Panel 81
- utility differences
 - extended 388
 - standard 387
- Utility Selection Panel 81

V

- V (VDEFINE) variable, P (pool) field 313
- V (view data set) line command, Data Set List utility (option 3.4) 143
- V record format, Record Format field 99
- VA command, Data Set List utility (option 3.4) 155
- Variables (option 7.3)
 - CANCEL primary command 313
 - creating new variables 314
 - D (delete) line command 313
 - DBCS data 315
 - deleting variables 314
 - END primary command 313
 - hexadecimal data 315
 - I (insert) line command 313

- Variables (option 7.3) (*continued*)
 - input errors 314
 - LOCATE primary command 313
 - manipulating variables 314
 - primary commands 313
 - split-screen mode 315
 - test mode 314
 - usage notes 314, 315
 - variable life 314
 - variable value 315
 - working with dialog variables 311
- Verb column 184
- VERT parameter, HEX command 70
- view, command table line command 186
- View (option 1)
 - description 59
 - View Entry Panel 59
- view action prompt workstation command 375
- VIEW command, Browse 72
- view output mode 194, 207, 217, 227
- View workstation command 375
- viewing a member 93
- volume, DASD 78
- Volume DATA field, VTOC Information Display 140
- Volume display view, Initial View field 127
- Volume field
 - Data Set List utility 134
 - Data Set List Utility panel 126
- VOLUME keyword, SORT command 154
- Volume Serial 78
- Volume Serial field
 - Allocate New Data Set panel 97
- VS COBOL II compiler (option 4.2) overview 241
- VS COBOL II compiler (option 5.2) 277
- VS COBOL II interactive debug (option 4.10) 254
- VS COBOL II interactive debug (option 5.10) 282
- VS COBOL II Interactive Debug panel 282
- VS command, Data Set List utility (option 3.4) 155
- VS data set organization, DSORG field 135
- VS-E 135
- VS FORTRAN compiler (option 4.3) 242
- VS FORTRAN compiler (option 5.3) 278
- VS Pascal compiler (option 4.6) 244
- VS Pascal compiler (option 5.6) 279
- VSAM workstation command 375
- VT command, Data Set List utility (option 3.4) 155
- VTOC Data field, VTOC Information Display 140
- VTOC information display 140
- VTOC summary workstation command 375
- VV command, Data Set List utility (option 3.4) 155

W

- WE workstation command 375
- WEW workstation command 375
- WIDE SuperCE process option 402
- window frame color 40
- word, defined for SuperC 204
- Word parameter
 - Compare Type field 204
 - FIND command 66
- Workplace (Option 11)
 - action bar choices 356
 - file 356
 - options 364
 - space 364
 - SuperC 366
 - test 367
 - view 363
- actions that require prompt windows 368
 - ISPF command shell 371
 - move/copy 372
 - rename 373
 - reset statistics 368
 - TSO command 369
 - WS command 370
- commands 375
- entry panels 353
 - data set view 354
 - library view 354
- example scenario 381
- ISPF Library field 354
- ISPF referral lists 355
- Object Name field 355
- overview 353
- specifying actions 356
- Workplace example 381
- workplace function keys 377
- workplace settings 377
- workstation agent
 - setting fonts 175
 - system register 176
- Workstation agent 170
 - installation program 170
- workstation agent window 174
- Workstation Commands
 - = 375
 - ACTBAR action prompt 375
 - allocate 375
 - allocate action prompt 375
 - allocate SMS 375
 - Browse 375
 - catalog 375
 - command action prompt 375
 - compress 375
 - Copy 375
 - CUA attributes 375
 - delete 375
 - Delete 375
 - delete action prompt 375
 - DSLIS 375
 - Edit 375
 - edit action prompt 375
 - full information action prompt 375
 - global color change 375
 - information action prompt 375
 - ISPF command shell 375
 - ISPF command table 375

Workstation Commands *(continued)*

- keylist 375
- list action prompt 375
- list view 375
- locate 375
- Member list 375
- Move 375
- NOACTBAR action prompt 375
- Open 375
- personal data set lists 375
- personal library lists 375
- point and shoot 375
- Print 375
- print action prompt 375
- print data set 375
- print data set index 375
- Print data set list 375
- Print VTOC information 375
- rename 375
- Rename 375
- rename action prompt 375
- reset action prompt 375
- SearchFor 375
- SearchFor extended 375
- select 375
- Settings 375
- short information 375
- Submit 375
- SuperC 375
- SuperC extended 375
- TSO 375
- uncatalog 375
- View 375
- view action prompt 375
- VSAM 375
- VTOC summary 375
- WE 375
- WEW 375
- workstation settings 375
- WS 375
- WV 375
- WVW 375
- workstation connection 44
- workstation settings command 375
- WRITE parameter 327
- Writer name 160
- writing a list to a list data set
 - data set list 151
- WS command 370
- WS command for member 93
- WS workstation command 375
- WSCON Service 172, 173
- WSCON System command 172, 173
- WV workstation command 375
- WVW workstation command 375

X

- X (print index listing) line command,
 - Data Set List utility (option 3.4) 146
- XREF Search-For process option 436
- XT field, Data Set list utility 135
- XT keyword, SORT command 154
- XWDCMP SuperCE process option 402

Y

- YES parameter
 - Active field 335, 337, 339
 - BROWSE Output field 207
 - Confirm Delete Request field,
 - select 127
 - Replace like-named members field,
 - select 119
 - Select pack option for "To" data set field 118
 - Specify additional search strings field,
 - select 217
 - Table available field 326
 - Table on disk field 327
- YYYY.DDD or YY.DDD format,
 - Expiration Date field 100
- YYYY/MM/DD or YY/MM/DD format,
 - Expiration Date field 99

Z

- Z (compress data set) line command,
 - Data Set List utility (option 3.4) 146
- z/OS C/C++ compile 289
- z/OS C/C++ compiler panel 269
- ZDLBLKSZ variable 138
- ZDLCAT variable 138
- ZDLCDATE variable 138
- ZDLCONF variable 138
- ZDLDEV variable 138
- ZDLDSN variable 138
- ZDLDSNTP variable 138
- ZDLDSORG variable 138
- ZDLEDATE variable 138
- ZDLEXT variable 138
- ZDLLCMD variable 138
- ZDLLRECL variable 138
- ZDLMSG variable 139
- ZDLNDSN variable 139
- ZDLRDATE variable 138
- ZDLRECFM variable 138
- ZDLREF variable 139
- ZDLSIZE variable 138
- ZDLUSED variable 138
- ZDLVOL variable 138

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